

The Relationship between HRM Practices and Innovation:
Perceptions of Employees in the Telecommunications Industry in Jordan

Motasem Mohammad M. THNEIBAT

Submitted for the degree
of Doctor of Philosophy

School of Management
University of Bradford
2016

Abstract

Motasem Mohammad M. Thneibat

THE RELATIONSHIP BETWEEN HRM PRACTICES AND INNOVATION:

Perceptions of Employees in the Telecommunications Industry in Jordan

Keywords: COMPETITIVE ADVANTAGE, HRM PRACTICES, INNOVATION, ORGANISATIONAL CLIMATE, ORGANISATIONAL PERFORMANCE, PRODUCT INNOVATION, RADICAL INNOVATION.

The purpose of this research is to provide a better understanding of the relationship between human resource management (HRM) practices and innovation. This research responds to calls in the literature on HRM and innovation to consider a wider number of HRM practices that have previously been neglected and are likely to produce a positive impact on innovation awareness and commitment (Shipton *et al.*, 2006; Zhao *et al.*, 2012). Therefore, the research is concerned with a wide number of HRM practices and their impact on innovation awareness and commitment. The underpinning rationale is that while previous studies have revealed that HRM practices can be significant for innovation, these studies are not inclusive, and the research is still scant and in its early stages as there has been a lack of consideration of a comprehensive range of HRM practices (Shipton *et al.*, 2006). In simple terms, previous studies have looked at the relationship between HRM practices and innovation based on a limited number of practices and at the macro or inter-organisational level. Therefore, the fundamental contribution of this thesis is the shift in perspective. While previous research has looked at a limited number of HRM practices that largely appear to be borrowed from high-performance work systems (HPWs), this thesis considers a wider range of practices that can impact on innovation at the intra-organisational level – more specifically, to study employees' perceptions of HRM practices that may promote innovation awareness and commitment. Innovation awareness and commitment refers to the extent to which the organisation is engaged in innovation. Degree of innovativeness and the open innovation approach are studied in this research, to determine

whether HRM practices can impact on radical or incremental open innovation. Additionally, departmental differences are considered in this thesis: that is whether employees in different departments have different perceptions of the extent to which HRM practices promote innovation'. To this end, the data set was obtained from two research phases. A quantitative survey was distributed to 280 employees in a Jordanian telecommunications company. Findings from the first phase of the research indicated a number of new HRM practices that were not recognised by previous studies. This research found a positive impact of HRM practices in promoting innovation, as perceived by employees. HPWs, HRM hygiene factors, motivation and communication were perceived by employees to promote innovation in their organisation. The results show that the relationship between HRM practices and innovation is perceived by employees to promote the origins of innovation, specifically open innovation and radical innovation. No support was found for expectations and sharing information to promote innovation. Phase two of the research consisted of semi-structured interviews conducted with senior managers and employees in the same company that participated in phase one. In phase two of the research, the interviews provided better insights and explanations of the results and findings from the survey questionnaire. The results from phase two confirmed the findings from the statistical analysis, and a distinctive finding was the differences between managers' and employees' perceptions of HRM practices. Employees identified or perceived practices that are related to their performance and that enable them to develop their levels of motivation and commitment. Managers identified practices that work in the favour of the organisation, with less focus on employee needs. This was clear when comparing which practices and indications were mentioned by managers and employees.

It is worth mentioning here that, given the relatively close conceptualisation in the literature that innovation is a form of organisational performance, this thesis does not intend to rebrand 'performance' as 'innovation' *per se*. This is especially in this research as it seeks to understand the relationship between HRM practices and innovation by looking at employees' perceptions of HRM practices that may promote innovation and cause their company to be perceived as an innovative workplace.

This research is probably the first attempt to study the role of a comprehensive list of HRM practices in influencing innovation by considering employees' perceptions of HRM practices that may promote innovation. Moreover, the intra-organisational level was considered, along with departments, degree of innovativeness (radical-incremental innovation) and types of innovation approach (open vs closed).

Acknowledgements

I cannot solely take the credit for the accomplishment of this thesis; it would not have been possible without having wonderful people walked through my life.

I would like to thank my main supervisor, Prof. David Spicer for his unflinching support and inspiration. He influenced me in the conducting of my PhD from the preliminary stages until the completion of this degree. In fact, for me, it was not only being in a specific school that allowed me to accumulate the knowledge that was transformed into academic words, in the form of a PhD, that helped me to gain this degree; I believe it was also being schooled by inspirational and highly valuable individuals such as Prof. David Spicer. From an engineering perspective, to be sure that your construction of a building is firm, solid, tolerant and durable, you should first start with a tough, resilient basis and foundations. Likewise, David's inspiration will be carried forwards throughout my academic life, beyond the completion of this degree. I will always owe David a huge debt of gratitude and respect.

I have learned that the best place to make mistakes and at the same time to learn is university. Maybe the most valuable lesson for me is that being in a business school has made me aware of the things cannot be taught; rather, I believe that the school has enabled me to digest information on any phenomena or dilemma I encounter in my life by looking through a tunnel that is lightened by my being more logical, more considered, less stressed and more confident, which even helps me to see things from multiple perspectives. This lesson, along with the PhD, has been so significant for me – and is perhaps the lesson of a lifetime – that I felt I ought to add it here at the beginning of my thesis, as the impact of this is equivalent to, and even greater than, just holding a PhD. The value obtained from this lesson shares a significance that is the same as, or possibly higher than, that of the work in this document, which is principally the result of different theorisations in strategic business and management. Yet, the whole journey of the PhD, with all its different platforms and milestones, not just the final destination, contributed significantly in developing this thinking.

I would like to express my very deep thanks and respect as ever to my father; without him providing continuous support and making sure that I was doing well, I would not have been able to carry on with this thesis. I will always remember his words: “we are living in a world where only the capable, confident and competent will be able to survive and be unique”. I truly wish to be like him at some point in my life. My mum is always in my heart and mind and I dedicate this work to her kind soul. I'm sure that she will be proud and happy. My beautiful sisters Amenah, Nusaibah, Banan, Bayan and Eman were amazing and supportive all the time. I owe them warm thanks. Special thanks go to my brother Mojahed, whose support was boundless.

Very special appreciation is also extended to the honest and kind Anastasia Siankouri, who was supportive at all times.

Finally, with my heartfelt, straight and honest words: Thank you all.

Table of Contents

Abstract.....	i
CHAPTER 1 INTRODUCTION	1
1.1 INNOVATION.....	2
1.2 HRM.....	5
1.3 THE NEED FOR THE RESEARCH.....	6
1.4 RESEARCH QUESTIONS.....	9
1.5 THESIS STRUCTURE.....	10
CHAPTER 2 LITERATURE REVIEW.....	12
2.1 INTRODUCTION	12
2.2 INNOVATION: INTRODUCTION AND SIGNIFICANCE	13
2.3 DEFINING INNOVATION.....	16
2.4 INNOVATION: A TYPOLOGY	25
2.5 DRIVERS OF PRODUCT INNOVATION.....	33
2.5.1 External Drivers	34
2.5.2 Internal Drivers	37
2.6 RADICAL OPEN INNOVATION	49
2.7 HRM: IMPORTANCE AND SIGNIFICANCE	55
2.8 DEFINING HRM.....	59
2.9 SCHOOLS OF THOUGHT AND MODELS FOR HRM.....	60
2.9.1 Best Practice - HPWs	61
2.9.2 Best Fit	62
2.9.3 Harvard Model	64
2.9.4 Guest Model.....	64
2.9.5 Storey Model	65
2.9.6 Warwick Model	65
2.9.7 Bath People Model.....	66
2.9.8 The Implications of HRM Models for the Present Research Study	67
2.10 RESEARCH ON HRM PRACTICES AND INNOVATION.....	70
2.10.1 Recruitment and Selection.....	80
2.10.2 Rewards and Incentives.....	81
2.10.3 Training and Development.....	83
2.10.4 Performance Appraisal.....	84
2.11 OTHER HRM PRACTICES THAT MIGHT HAVE AN IMPACT ON PRODUCT INNOVATION.....	89

2.11.1 High-Performance Work Practices (HPWs)	92
2.11.2 Motivation and Communication.....	94
2.11.3 Hygiene Factors	97
2.11.4 Expectations and Information Sharing.....	99
2.12 CHAPTER SUMMARY	100
CHAPTER 3 RESEARCH DESIGN, METHODOLOGY AND METHODS	102
3.1 INTRODUCTION	102
3.2 Research Aims.....	105
3.4 RESEARCH PHILOSOPHY.....	109
3.4.1 Positivism.....	110
3.4.2 Phenomenology.....	110
3.5 RESEARCH APPROACH	113
3.6 RESEARCH STRATEGY	115
3.7 DATA COLLECTION METHODS: PHASE ONE	117
3.7.1 Country Profile	117
3.7.2 HRM in the Middle East: The Context of Jordan	118
3.7.3 Choice of Industry	120
3.7.4 Study Population	123
3.7.5 Survey Questionnaire: Sample Selection.....	123
3.7.6 Survey Questionnaire: Respondents	125
3.8 SURVEY QUESTIONNAIRE MEASURING INSTRUMENTS	126
3.8.1 Measuring Innovation Awareness and Commitment	127
3.8.2 Measuring HRM Practices	129
3.8.3 Measuring Organisational Climate	137
3.8.3.1 Organisational Performance.....	138
3.8.3.2 Organisational Structure	138
3.8.3.3 Organisational Knowledge.....	138
3.8.3.4 Organisational Culture.....	138
3.9 SURVEY QUESTIONNAIRE: DATA COLLECTION PROCEDURE	138
3.10 SURVEY QUESTIONNAIRE: DATA ANALYSIS.....	139
3.11 DATA COLLECTION METHODS: PHASE TWO	140
3.11.1 Study Population	140
3.11.2 Sample Selection	141
3.11.3 Semi-Structured Interviews: Respondents.....	141

3.12 SEMI-STRUCTURED INTERVIEWS: INSTRUMENT	142
3.13 SEMI-STRUCTURED INTERVIEWS: DATA COLLECTION PROCEDURES	144
3.14 SEMI-STRUCTURED INTERVIEWS: DATA ANALYSIS.....	145
3.15 ETHICAL CONSIDERATIONS.....	147
3.16 CHAPTER SUMMARY	150
CHAPTER 4 QUANTITATIVE DATA ANALYSES AND RESULTS	152
4.1 INTRODUCTION	152
4.2 SURVEY QUESTIONNAIRE RESPONDENTS.....	153
4.3 EXPLORATORY FACTOR ANALYSIS.....	154
4.4 SCALES CONSTRUCTS:	160
4.4.1 HPWs Scale:	160
4.4.2 Expectations and Information Sharing Scale:.....	161
4.4.3 Hygiene Factors Scale:	162
4.4.4 Motivation and Communication Scale:.....	162
4.4.5 Organisational Climate Scale	163
4.4.6 Origins of Innovation Scale.....	163
4.4.7 Radical vs Incremental Scale:	164
4.5 DESCRIPTIVE STATISTICS	164
4.6 MAIN EFFECTS.....	165
4.6.1 Gender and Age	165
4.6.2 Department.....	166
4.6.3 Education.....	166
4.7 RELATIONSHIP BETWEEN HRM VARIABLES, ORGANISATIONAL CLIMATE AND INNOVATION SCALES.....	166
4.8 MULTIPLE REGRESSION ANALYSIS	168
4.8.2 Multiple Regression Results for Radical vs Incremental Innovation	171
4.9 DISCUSSION	173
4.10 CHAPTER SUMMARY	182
CHAPTER 5 INTERVIEW RESULTS AND ANALYSIS	184
5.1 INTRODUCTION	184
5.2 INTERVIEW RESULTS: MANAGERS	186
5.2.1 Competitive Advantage	187
5.2.2 Holistic Approach	189
5.2.3 Innovation	195

5.3 SUMMARY OF THE INTERVIEWS.....	210
5.4 INTERVIEW RESULTS: EMPLOYEES	211
5.4.1 Renewal Process and Market Needs.....	211
5.4.2 Open innovation and market pull	212
5.4.3 Motivation and Commitment.....	215
5.5 SUMMARY OF THE INTERVIEWS.....	230
5.6 DISCUSSION OF THE RESULTS.....	233
5.6.1 Attitudes to HRM	233
5.6.2 Attitudes to Organisational Climate	241
5.6.3 Attitudes to innovation	245
5.7 SUMMARY	250
CHAPTER 6 CONCLUSION.....	253
6.1 INTRODUCTION	253
6.2 RESEARCH PHASES	253
6.2.1 Phase One: Quantitative Questionnaire Survey.....	253
6.2.2 Phase Two: Qualitative Semi-Structured Interviews.....	254
6.3 SUMMARY OF THE RESEARCH FINDINGS	255
6.4 ORGANISATIONAL IMPLICATIONS OF THE STUDY.....	270
6.5 RESEARCH CONTRIBUTIONS.....	273
6.5.1 Contributions for Research:.....	273
6.5.2 Contributions for Practice and Policy:	275
6.6 RECOMMENDATIONS FOR FUTURE RESEARCH	277
6.7 RESEARCH LIMITATIONS.....	279
6.8 CONCLUDING REMARKS	281
References	283
APPENDICES	315

List of Figures

Figure 2.1 Timeline for the development of an innovation definition	16
Figure 2.2 Studies on HRM practices and product innovation	71
Figure 3.1 The relationship between HRM practices, organisational characteristics and product innovation	103
Figure 3.2 Research processes onion	105
Figure 3.3 Jordan's location in the Middle East	118

List of Tables

Table 2.1 Development of Innovation Definitions by Era.....	23
Table 2.2 Innovation Types	28
Table 2.3 Studies on HRM Practices and Innovation	87
Table 2.4 Overview of HRM and Innovation Studies	91
Table 3.1 The Main Differences Between the Deduction and Induction Approaches.....	115
Table 3.2 Characteristics of Respondents	126
Table 4.1 Respondent's Characteristics	153
Table 4.2 Five-Factor Solution using Varimax Rotation	155
Table 4.3 Five-Factor Solution Outcome.....	157
Table 4.4 Factor Analysis for the Dependent Variables: Innovation Willingness, Origins of Innovation and Radical vs Incremental Innovation.	158
Table 4.5 Factor (new variables) Labelling	159
Table 4.6 Descriptive Analyses of the New Variables.....	165
Table 4.7 Effect of Respondents' Characteristics (gender and age)	165
Table 4.8 Correlation Results.....	167
Table 4.9 Multiple Regression Model: DV= Origins of Innovation	169
Table 4.10 Model Summary	170
Table 4.11 Multiple Regression Model: DV= Radical vs Incremental Innovation	171
Table 4.12 Model Summary	172
Table 4.13 Comparison of the Findings Between the Dependent Variables: Origins of Innovation and Radical vs Incremental Innovation.	181
Table 4.14 Accepted and Rejected Research Hypotheses.	182
Table 5.1 Respondent's Characteristics (Key personnel)	185
Table 5.2 Respondent's Characteristics (Employees)	185

List of Appendices

Appendix 1 Survey questionnaire	315
Appendix 2 Scales Items	324
Appendix 3 Semi-Structured Interviews Guide (Managers).....	329
Appendix 4 Interviews Transcripts (Managers).....	330
Appendix 5 Semi-structured interviews guide (Employees)	337
Appendix 6 Interviews Transcripts (Managers).....	338
Appendix 7 Descriptives of Scales	349
Appendix 8 Factors Analysis (Reliability and ITC)	364
Appendix 9 Skewness and Kurtosis Results	370
Appendix 10 Multicollinearity Results	377

CHAPTER 1

INTRODUCTION

Innovation is of critical importance for economies, governments and organisations. It is widely recognised as a source of competitive advantage (Herrmann *et al.*, 2006; Baker *et al.*, 2016; Fenech and Tellis, 2016). In studies of innovation management, the need to consider multiple drivers and promoters of innovation has gained growing interest. Many of the existing studies have focused on drivers such as competition, R&D, technological advances and resources to sustain competitive advantage and introduce innovation (Damanpour *et al.*, 2009; Christensen, 1997; Chiva *et al.*, 2014). Whilst research on innovation management reached heights of pre-eminence in the era from the 1980s to the 2000s, research on firm-specific drivers is still scant. There is a paucity of work investigating the role of other drivers within the organisation (intra-organisational drivers), that may underpin innovation, which this research seeks to address. Principally, this research looks at the role of HRM practices that can facilitate and promote innovation.

The starting point for this thesis came from Shipton *et al.*,’s (2006) call for further research on the relationship between HRM practices and innovation. Other studies were also considered in examining the HRM–innovation relationship, following calls from Zhao *et al.*, (2012) and Jimenez and Valle (2008). Consequently, this study aims to extend existing research on HRM practices and innovation by incorporating a wide range of practices that have not previously been considered. More fundamentally, the study looks at employees’ perception of HRM practices that may promote awareness of and commitment to innovation. By doing so, this research focuses on the intra-organisational level rather than the inter-organisational level. In addition, this study considers the type of innovation as well as the degree of innovativeness in the relationship. This entails that radical vs incremental innovation is considered in exploring the relationship between HRM practices and innovation. The innovation approach is also considered, where open innovation is promoted by HRM practices. Furthermore, the role of

departments and the impact of HRM practices on innovation within departments are recognised.

Overall, the study intends to contribute to our existing knowledge with regard to HRM practices and innovation. The study seeks to advance our understanding of the relationship between HRM practices and innovation and the impact of departments on innovation. As employees are the main source of ideas and knowledge, this study considers employees' awareness of and commitment to innovation. More details of the study and its structure are presented below.

1.1 INNOVATION

The importance of innovation for sustaining competitive advantage and growth has been addressed by numerous researchers. Innovation is even seen as a survival tool for organisations in today's marketplace (Damanpour *et al.*, 2009). Historically, innovation is linked to 'creative destruction', a term coined and popularised by Schumpeter in the 1920s and 1930s. Following Schumpeterian work on innovation, the literature on business management received extensive interest and has been subject to numerous studies. These have aimed to cover a wide range of topics related to innovation, such as definitions of innovation, innovation typologies, and drivers of innovation. Innovation has been studied from different perspectives and this has challenged the ability to draw a definition of innovation that is universal and incorporates different perspectives and interests (Adams *et al.*, 2006; Trott, 2008; Fores and Camison, 2016). In basic terms, innovation can be defined as the introduction of new products, services or processes that create profit and growth and sustain competitive advantage (Tidd, 2001; Jimenez and Valle, 2011; Cassiman and Veugelers, 2006).

Since the 1980s and 1990s, more studies have revealed the importance of innovation for organisational performance (Teece, 2007; Cuevas-Rodriguez *et al.*, 2014; Singh *et al.*, 2016). These studies have linked innovation with performance. Research concerned with innovation and organisational performance has focused on the drivers of innovation in order to enhance performance. Performance is then measured based on financial returns,

competition, quality of products, market position and ability to lead the market (Damanpour and Evans, 1984; Tsai, 2001; Darroch, 2005). Drivers of innovation have also been linked to measures of organisational performance. Research on innovation and performance has mostly been conducted across various industries in developed contexts such as the UK and the USA. Generally, the results have revealed the positive role of innovation in developing performance.

Scholars have concluded that organisations are likely to struggle to overcome challenges and complexity associated with innovation if they rely on their resources and internal abilities; rather, organisations are encouraged to expand and go beyond their boundaries to facilitate innovation to gain skills, knowledge, tactics, resources and experience (Baker *et al.*, 2016). Scholars have produced a literature on innovation that has classified the drivers of innovation into external and internal drivers. In the context of this research, the open innovation approach is considered. Adopting open innovation entails exceeding organisational routines, tactics, ties, knowledge, skills and experience to bridge gaps and acquire new knowledge, skills, networks and experience that can minimise the complexity of innovation processes and promote innovation. On this basis, this thesis, in addition to responding to recent calls in the literature on HRM and innovation to consider a wider number of HRM practices, also responds to calls to consider external resources in the promotion of innovation (Baker *et al.*, 2016; Dyer and Singh, 1998). Research on the drivers of innovation appears to be specific to factors that are tangible and can be imitated, such as R&D expenditure, and resources in the form of machines, buildings and inserted technology. HRM practices have greater potential direct impact on employees. Regarding innovation, ideas are the main source of and starting point for the innovation process. Existing studies have revealed a significant impact of HRM practice on innovation. As with any other studies, these studies have a characteristic narrative that describes their nature and problem statements. The majority of studies that have looked at HRM practices and innovation can be characterised as follows: studying the role of a limited subset of HRM

practices, and studying the impact of HRM practices on innovation by considering a mediating factor such as knowledge and creativity.

Moreover, research on innovation exploring innovation typologies classified innovation based on its 'end product or form', comprising the following typologies: product, process, service, marketing, technology, and management innovation (Abernathy and Clark, 1985; Christensen, 1997; Damanpour, 2010; Chiva *et al.*, 2014). It is noteworthy that in the innovation management literature, innovation is categorised, in terms of degree of newness and innovativeness, as either radical or incremental innovation (Abernathy and Utterback 1978; Tidd, 2001; Damanpour, 2010). In the context of this research, the level of newness in terms of radical vs incremental innovation is considered in studying the impact of HRM practices on innovation. More precisely, whether the potential impact of HRM practices promotes radical or incremental innovation is studied in this research.

Therefore, this research studies the relationship between HRM practices and innovation by considering a more comprehensive list of HRM practices. Moreover, to study employees' perceptions of the relationship between HRM practices and innovation awareness and commitment (the extent to which they perceive that their organisation is engaged in innovation). The study of the HRM–innovation link is focused on the intra-organisational level. This entails that the research is focused on employees rather than on line management. The employees involved in this research are those engaged in activities related to innovation. Employees who are in service-led departments such as HRM and Sales and innovation-focused departments such as R&D and Product development innovation are defined as targeted respondents for this research. Chapters 2 and 3 offer more detail on the nature of employees and the selection process and discuss the potential impact of HRM practices on innovation by including other practices that have not been studied before by including other practices that have not been studied before.

1.2 HRM

HRM is conceived of as an organisation-specific tool that can enhance performance and employees' skills and abilities (Storey, 2007; Beer *et al.*, 1984). In simple terms, HRM can be identified as organisational activities and procedures that relate to the management of employees in the workplace. Boxall and Purcell (2000, p. 184) stated that "HRM includes anything and everything associated with the management of employment relations in the firm".

In the 1980s and 1990s, the area of HRM received a considerable amount of research interest, especially in the UK and the USA. Growing interest resulted in the replacement of previously used terms such as 'employee relations', 'personnel management', 'industrial relations' and 'labour relations' (Beardwell and Claydon, 2010; Redman and Wilkinson, 2006; Edgar and Geare, 2009). Following this, scholars have explored the impact of HRM practices on several aspects of organisational activities. A pressing need has emerged within organisations to consider more effective implications of HRM practices as a result of globalisation, rapid changes in the marketplace and skills gaps (Ferguson and Reio, 2010). As noted by researchers, organisations have become more open and flexible and less hierarchical (Edgar and Geare, 2009). More fundamentally, organisations have started to realise the importance of intangible resources in promoting organisational performance and enhancing competitiveness.

This has resulted in numerous attempts to link HRM practices with several aspects of organisational activities such as performance, employee relations, skills, knowledge sharing and employees' behaviours and attitudes.

Although scholars have stressed the need to broaden organisational scope to encompass knowledge and critical resources that are out-boundaries to the organisation donating to rely on external drivers, recent studies on internal drivers of innovation have proposed that HRM practices can be a critical factor in promoting innovation, and research in this area is regarded as scant and unable to offer comprehensive insight into the impact of HRM practices on innovation. Studies examining the relationship between HRM practices

and innovation are macro-focused, in that they look at the inter-organisational level to study the impact of HRM practices in promoting innovation. Chapter 2 provides further discussion in this regard.

For the framework of this thesis, a wider number of HRM practices that may promote innovation are offered. Therefore, this research aims to study the relationship between HRM practices and innovation by considering a more comprehensive list of practices. The intra-organisational level, where employees' awareness of and commitment to innovation are considered, is a main concern of this study.

1.3 THE NEED FOR THE RESEARCH

The research need stems from recent calls in the literature of HRM and innovation management to study the role of HRM practices in promoting innovation. The literature on HRM management proposes that HRM practices are associated with superior outcomes in terms of organisational performance (Wood and Wall, 2005; Wright *et al.*, 2005; Katou and Budhwar, 2009). Similarly, studies on innovation suggest that it can be promoted through a number of drivers such as R&D, technological advances and competition. Recently, scholars have argued that intangible resources that are organisation-specific are central to innovation and that organisations need to create new paths that are unlike traditional approaches in order to sustain innovation. More specifically, researchers suggest that HRM practices are vital for innovation, given their potential to be rare and specific to the organisation (Cabrales *et al.*, 2008; Scarbrough, 2003; Shipton *et al.*, 2005; 2006) and that HRM practices can be a conduit for new ideas, skills, knowledge, abilities and enhanced performance (Shipton *et al.*, 2005; 2006; Zhao *et al.*, 2012). Their main argument is that HRM practices can enhance and promote untapped employee skills, improve organisational capabilities, maximise the utilisation of resources, and promote knowledge and information sharing (Jimenez and Valle, 2008; Zhao *et al.*, 2012).

Despite recognising the significance of HRM practices in promoting innovation, researchers have limited the scope of their studies and potential contribution to a subset of HRM practices that have been studied repeatedly.

A review of existing studies reveals that the HRM practices that have been frequently studied are training, performance appraisal, recruitment and rewards.

There has been a failure to holistically consider other HRM practices from employees' perspective that might have an impact on innovation. It is this intriguing finding that prompted the main aim of this research study. Additionally, a number of mutual themes shared by existing studies on HRM practices and innovation can be identified. In terms of scope, most of the other studies have adopted a macro-level or inter-organisational scope of focus, looking at managerial perceptions and understanding of the relationship between HRM practices and innovation. In addition, several departments from different industries were questioned and involved in these studies. In terms of the impact on innovation, mediating factors such as knowledge, creativity and commitment have controlled the impact of HRM practices on innovation. In other words, the direct impact of HRM practices on innovation has not been addressed in these studies. Regarding departments, the studies have failed to examine the role of departments and their contribution to innovation. Applying HRM practices to employees within specific departments to enhance innovation has not previously been considered. In terms of type of innovation, previous studies have focused on promoting innovation generally, rather than being specific to a certain type of innovation, such as product or process innovation. Additionally, existing studies have not considered the degree of innovativeness and newness when studying the impact of HRM practices on innovation. The indications stated above form the distinct need for this research. This research seeks to offer a distinct contribution in the area of HRM and innovation management. Its comprehensiveness in recognising other HRM practices that may potentially impact on innovation contributes to this research's difference from previous research on HRM and innovation. Also, this research looks at the degree of innovativeness identified as radical vs incremental innovation in the new products. An approach to innovation in favour of open innovation is also considered in this research. The impact of HRM practices on innovation awareness and commitment within departments is looked at to determine

whether departments differ in terms of which HRM practices promote innovation awareness and commitment. This means that this research attempts to study the relationship between HRM practices and innovation; identify which departments are more aware and willing to innovate; and identify the extent to which organisational approach (open innovation) and radical vs incremental innovation are associated with HRM practices. Therefore, the aims of this research are as follows:

Fundamentally, this study seeks to look at employees' perceptions of the relationship between HRM practices and innovation. The thesis is intended to identify a number of HRM practices that employees perceive to be beneficial for innovation. Moreover, in this research there is consideration of a wider range of practices in the HRM–innovation synergy, which previous studies failed to consider. These practices may promote innovation awareness and commitment and therefore, in order to establish a more robust conceptualization of the HRM–innovation relationship, a wider number of HRM practices are addressed in this research.

Also considered in this research is the position of employees within the organization – that is, within service-led departments (HRM/Sales) or innovation-focused departments (R&D/Product development) – and whether this positioning contributes to the identification of different perceptions of HRM practices to promote innovation. This designates the study towards the intra-organizational level by seeking to study employees' perceptions of HRM practices on innovation.

Additionally, the degree of innovativeness (radical vs incremental) and type of innovation perceived by employees in the HRM–innovation link fall within the scope of this research. To constitute a holistic picture of what promotes innovation from the employees' standpoint, and in an attempt to identify internal drivers that may impact on innovation awareness and commitment, organizational climate factors incorporating performance, structure, knowledge and culture are examined.

1.4 RESEARCH QUESTIONS

To fulfil the research aims, a number of research questions were formed. Two main research questions, highlighted below, guide the process and narrative of this research. A number of hypotheses are developed for these questions.

RQ1– To what extent is there a relationship between employees’ perceptions of HRM practices and innovation awareness and commitment?

RQ1a– What are employees’ perceptions of the relationship between HRM practices and radical open innovation?

RQ1b– Do employees in different departments (HRM/Sales) and (R&D/Product development) vary in their perceptions of the relationship between HRM practices and innovation awareness and commitment?

RQ2– To what extent do employees perceive organisational climate to influence their awareness of and commitment to innovation?

RQ1 is the main research question; it addresses employees’ perceptions of the potential relationship between HRM practices and innovation and is related to the extent to which HRM practices influence innovation. This question aims to identify HRM practices that may potentially impact on innovation awareness and commitment among employees. This question has two sub-questions. RQ1a examines employees’ perceptions of the extent to which the organisation is engaged in radical vs incremental innovation. The potential impact of HRM practices on employees’ awareness and commitment to radical vs incremental innovation in their organisation is the focus of this question, along with the open innovation approach. RQ1b considers whether there is a difference within departments in terms of which HRM practices promote innovation awareness and commitment.

RQ2 focuses on the impact and role of internal drivers in terms of organisational climate in promoting innovation. This question looks at four dimensions of organisational climate: organisational performance, organisational structure, organisational knowledge and organisational culture. A number of hypotheses were adopted for this research question. Chapter 3

(see Section 3.3) provides more details and discussion of research questions.

1.5 THESIS STRUCTURE

This thesis is divided into six chapters, including this one. The literature review is presented and discussed in Chapter 2. Chapter 3 covers research design, methodology and methods undertaken to collect data. Chapter 4 presents statistical analyses and findings for the collected data. Chapter 5 presents and details the semi-structured interviews and links the discussion with the statistical findings. Chapter 6 presents the conclusion to the research, incorporating the research contribution, recommendations for future research and limitations. The content of these chapters is outlined briefly below.

A literature review on innovation and HRM practices is considered and discussed in Chapter 2. Definitions of innovation are presented, along with typologies. In addition, drivers of innovation are discussed. Then HRM practices are discussed and HRM models and schools of thoughts are described. HRM in the Jordanian context is also considered. Moreover, studies linking HRM practices and innovation are presented and discussed. The current gap in the literature and existing studies on HRM practices and innovation are addressed.

Research design, methodology and methods are considered in Chapter 3. The research need is revisited. The philosophical paradigm that underpins the methodological approach for this research is discussed and justified. The research aims and questions are presented. The research hypotheses in relation to the research questions are developed and presented. The research strategy and methodical approaches are also discussed. The phases of the data collection are also identified and discussed, as well as the research instruments used in each phase. Two phases are adopted in this research. The first concerns the questionnaire survey, and the second consists of semi-structured interviews. The details of each phase are considered in Chapter 3.

The results and analyses for phase one of the research are considered in Chapter 4. Chapter 4 presents the statistical findings of the data. It details the descriptive analysis and findings for scales representing the independent variables (IV) and dependent variables (DV). The results and analyses for phase one of the research are considered in Chapter 4. Chapter 4 presents the statistical findings of the data. It details the descriptive analysis and findings for scales representing the independent variables (IV) and dependent variables (DV). Additionally, factor analysis and outputs of this test are included and explained. Correlation results and multiple regression analyses are contained in this chapter. The chapter also presents the statistical findings followed by discussion of the results. This forms phase one of the research.

Phase two of the research is considered and presented in Chapter 5. This chapter details the use of semi-structured interviews. Participants are identified and results are introduced. Discussion of results from the participating organisation is then presented.

The final chapter (Chapter 6) offers an overall conclusion for the research. It consists of a summary of the research processes and main findings and discussion with respect to the research questions. The implications of the research are also considered. Then the chapter presents the research contribution, followed by recommendations for the direction of future research. The limitations of the research are then presented. At the end of the chapter, concluding remarks are made.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter aims to review the existing literature on innovation. The chapter highlights the importance of the research area, and it presents the main arguments on innovation. The potential contribution of this research study is also discussed in this chapter, based on existing studies and arguments around the topic.

The chapter starts by introducing the importance of innovation to achieve competitive advantage by providing a brief overview of innovation and the need for innovation nowadays (see Section 2.2). Then the chapter reviews the literature on definitions of innovation in Section 2.3 by reviewing their development over a number of eras, starting with Schumpeter's early work on innovation (1940s and 1950s). Following that, types of innovation are introduced in Section 2.4 to show which ones organisations tend to adopt and introduce to the market. In addition, to understand multiple aspects of innovation, a distinction between product and process innovation is presented. Section 2.5 then presents the product innovation drivers. Product innovation is driven within two contexts: external and internal. Following that, the chapter proceeds to discuss radical open innovation (see Section 2.6). The literature on product innovation shows that HRM practices are among the internal factors that promote product innovation. Moreover, the literature on HRM practices and innovation shows that HRM practices and innovation need more research and that research in this area is relatively new. Based on this, Section 2.7 dealing with the significance and importance of HRM practices is offered. This is done to understand and study how HRM practices relate to and promote product innovation. Then, a section for defining HRM is presented (see Section 2.8). Schools of thoughts and models of HRM are offered in Section 2.9 in addition to the implication of HRM models for the present thesis. Subsequently, research on HRM

practices and innovation is presented (see Section 2.10). Following that, other HRM practices that might have an impact on product innovation is introduced (see Section 2.11). Finally, a chapter summary is introduced in Section 2.12 to conclude the chapter and summarise the main ideas and arguments discussed in the literature review.

2.2 INNOVATION: INTRODUCTION AND SIGNIFICANCE

This section introduces innovation from the business and management perspectives. It highlights the importance of innovation and its contribution to and value for sustaining competitive advantage.

Every business has some sort of competitive advantage, such as product mix, location, resources, capabilities and technological advances (Teece, 2007; Barney, 1991). However, no matter what sort of competitive advantage a business possesses at the present time, changes in the marketplace and the external environment can degrade it (Shipton *et al.*, 2006; Damanpour, 2009). This creates a pressing need to sustain competitive advantage. Traditionally, obtaining competitive advantage and growth has been attributed to innovation (Van de Ven, 1986; Damanpour, 2010; Bessant *et al.*, 2005). Innovation is widely considered and recognised as a source of competitive advantage and growth (Anderson *et al.*, 2014). Faced by increasing competition, the reduced life cycle of products and rapid changes in customer needs, marketplace innovation is becoming more crucial for organisations (Birdi *et al.*, 2016). Beyond allowing organisations to be more effective, innovation is perceived more often as a condition for survival (Baker *et al.*, 2016). Innovation has been the subject of burgeoning interest and attempts have been made to identify factors and drivers that allow organisations to sustain and promote innovation (Leenders and Dolfsma, 2016; Bammens, 2016; Crossan and Apaydin, 2010; Tushman and O'Reilly, 1997). Especially among scholars, questions relating to the organisational arrangements and processes required for and appropriate to sustaining innovation and to why some organisations are more successful and capable in adopting innovation are asked and explored continually (see, for example, Baker *et al.*, 2016; O'Connor, 2008; Slater *et al.*, 2014).

The importance of innovation for organisations stems from its status as the most efficient way to provide organisations with a sustainable competitive advantage, since it utilises the process of adapting to change through continuous new development (Porter, 1990; Danneels, 2002). Moreover, nowadays innovation is not only recognised as an essential tool that helps organisations to grow and compete but is also labelled as a survival tool (Baker *et al.*, 2016) as competitors continuously introduce and develop new products and services (Van de Ven, 1986; Jimenez and Valle, 2008; Salavou, 2002). A variety of scholars have identified that without innovation organisations may fail to survive in the market (Damanpour, 2010; Van de Ven, 1986; Teece, 2007; Johnson *et al.*, 2011).

In addition, innovation brings change to the organisation, which advocates innovation promises, which entails market leadership and sustainable competitive advantage, enhancing profitability and growth (Trott, 2008; Tidd and Bessant, 2009).

Innovation is significantly associated with organisational adaptation to external change, market turbulence, technological change, rapid changes in customer demand and reduced life cycle of products (Colbert, 2004; Damanpour, 2010; Baker *et al.*, 2016). Such changes cannot be ignored or neglected as they are driven by the globalising economy and technological advances. Moreover, innovation provides organisations with a source of renewal and growth (Porter, 1990) and is widely known as an engine for growth, thriving organisational performance and enhanced financial position (Teece, 2007; Bessant *et al.*, 2005; Singh *et al.*, 2016).

Furthermore, innovation is important not only for organisations, but also for the economy. The added value that innovation creates for the economy is becoming increasingly significant. With a market characterised as being globalised, economists have emphasised the significance of innovation to promote growth. The classic view that innovation is essential for economic growth was popularised by Schumpeter in the 1940s and 1950s. The economic spirit of innovation entails creative destruction, which aims to

replace existing products and services with new ones (Schumpeter, 1942; 1959).

Innovation's importance is also recognised by governments and policymakers. Government initiatives and support show that innovation is the lifeblood of the economy. Policy and regulations that countries such as the UK and the USA are adopting to promote innovation emphasise its importance. Entering new markets and creating space for new products and services would be more difficult without government support in a variety of ways, such as reducing taxes and signing trade agreements (new support for small businesses, 2014). Especially in the current economic crisis, innovation is considered a vital tool for boosting the economy. As it may entail opening new markets, it can help in reducing the unemployment rate as well as securing a path to the future through creation of competitive advantage and long-term growth (Atkinson and Andes, 2010).

The study of innovation also helps managers and organisations to understand how they can improve and enhance organisational efforts, structure and strategy to compete in the marketplace (Jansen *et al.*, 2006). In addition, organisational strategy and structure can be adopted and modified according to the need to introduce new products and services (Jimenez and Valle, 2008). Introducing new products and services, as well as adopting innovation strategy, leads to a flexible structure and a strategy geared towards innovation.

Having shed some light on the importance and significance of innovation, in summary, innovation can be characterised as a dynamic tool that promotes competition within industries, aiding firms to sustain competitive advantage, achieving customers' needs, creating demand, fuel the economic cycle and drive thrive to industries. All these plethora of advantages for innovation, are directly and indirectly linked with economic growth, and leading to a robust financial performance especially in the case of radical innovations. Therefore, the study of innovation for organisations, employees, and economies is of crucial importance. The literature review will proceed to describe in the next

section what innovation is by presenting various definitions proposed by scholars.

2.3 DEFINING INNOVATION

This section reviews various definitions of innovation by tracing their history and showing how they have developed over the years. Based on this discussion, a definition of innovation specific to the study is then developed and adopted. The structure of this section is outlined in Figure 2.1. It begins with the development of a definition of innovation from the early work of Schumpeter and shows his contribution to innovation knowledge. Following consideration of Schumpeter's definition, this section will show how other researchers have developed an understanding of innovation and introduced new definitions. A key distinction between each era will be made, based on the new elements that researchers have proposed in the different phases of innovation development.

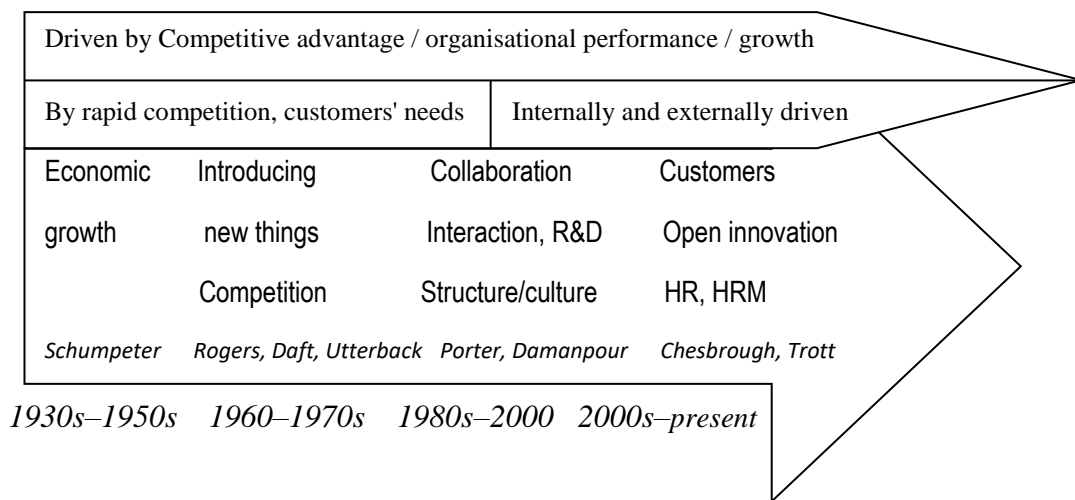


Figure 2.1: Timeline for the development of an innovation definition.

Source: Author.

Innovation has been explored at length over recent decades and has been studied in different disciplines and from different perspectives, such as technology, marketing, customers and economic growth (Schumpeter, 1942; 1950, Ettlie *et al.*, 1984; Adams *et al.*, 2006; Damanpour, 1996). Efforts to provide a comprehensive definition of innovation have failed and there is no

universal definition of innovation, as stated by Adams and colleagues: “the term ‘innovation’ is notoriously ambiguous and lacks either a single definition or measures” (Adams *et al.*, 2006, p. 22).

Historically, innovation was perceived as a source of economic growth and development. This belief was popularised by Schumpeter in the late 1930s. Schumpeter (1934; 1942; 1950) was one of the most famous and influential researchers of innovation at that time, and his work is much quoted in the literature (Damanpour, 1991; 2010, Trott, 2012; Bessant *et al.*, 2005). According to Schumpeter (1939, p. 80), innovation is

“The introduction of new commodities. Technological change in the production of commodities already in use, the opening up of new markets or of new sources of supply, improved handling of material – in short, any form of ‘doing things differently’ in the realm of economic life”

Schumpeter's definition includes a wide range of measures such as introducing changes to the production system, technological advances and creation of new markets. According to the Schumpeterian view, economies are subject to growth when organisations introduce new products such as computers, software or aeroplanes rather than reducing the price of products. In addition, Schumpeter (1942) referred to innovation as a “creative destruction” tool that allows organisations to replace existing products or services in the market by introducing new ones for the purpose of developing the economy.

Following Schumpeter's work, other researchers started to investigate innovation and its attributes. For example, Rogers (1962, p. 12) defined innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption”. This suggests that innovation is not only new to the economy as Schumpeter said, but also to the individual or unit of adoption that introduced innovation, which offers a broader definition. Rogers's definition of innovation is distinct from Schumpeter's in that Rogers conceptualises innovation as introducing something new regardless of the economic perspective. Schumpeter viewed innovation as new to the

economy, to add value, while Rogers viewed it as new to the individual, organisation or adapting unit, which represents a broader perception than Schumpeter's limited view of innovation as being of only general economic importance. Rogers (1962) added that innovation is a process of social interaction over time within a social system, which throws light on the internal arrangements to support innovation. Such internal arrangements can be employees' cooperation and interaction. This represents a development from Schumpeter's perception and view of innovation. In contrast, Schumpeter (1939, p. 80) stated that innovation is about "doing things differently" to sustain economic growth. Rogers (1962) added that newness of innovation and products includes dimensions of knowledge, acceptance and the decision to adopt.

Rogers's expansion of the understanding and perception of innovation introduces the role of individuals in developing new products and suggests that innovation does not take place in a simple manner; rather, it requires a series or waves of activities driven by external drivers such as competition (Utterback, 1971; Abernathy and Utterback, 1978). Organisational efforts to introduce innovation rely on the external environment in terms of competition and the organisational growth strategy (Utterback, 1971). Therefore, as organisational responses to external competition vary among industries and contexts, Utterback (1971, p. 77) conceptualises innovation as "an invention which has reached market introduction in the case of a new product, or first use in a production process, in the case of process innovation". Utterback theorises innovation as a process that requires careful consideration of the market and customer needs. In addition, innovation requires changes in the production process in order to enhance the quality of products. This definition differs from Rogers's definition, in that Utterback pointed out the importance of marketing the new products and making changes in the processes and methods of production; Rogers's view of innovation is limited to the introduction of new products and services, and being new to the individual, organisation and unit of adoption as he neglected the role of production processes or customer needs.

In the 1980s, Van de Ven (1986) conceptualised innovation as a process of interaction between employees over time to introduce and implement new ideas. He defined innovation as “the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order”. This definition suggests that innovation has moved from just introducing something new, or, as stated by Utterback (1971), implementing marketing efforts and changes in production processes, or something that does not require collaboration between organisational factors over time to foster innovation. It indicates that innovation requires the support of different departments within the organisation, which means that adopting innovation is a process that entails the source of organisational change, which expands the body of knowledge on innovation; previous studies such as those of Abernathy and Utterback (1978) and Rogers (1962) simply stated that innovation requires interaction between employees.

Along with collaboration and support of different units within the organisation, innovation has been viewed as a means of creating changes within organisations. As a result, innovation adoption has been developed at different levels, resulting in the clarification of different types of innovation in response to various external threats, especially competition. In the light of this, Damanpour (1996) defined innovation as follows: “innovation is conceived as a means of changing an organization, either as a response to changes in the external environment or as a pre-emptive action to influence the environment. Hence, innovation is here broadly defined to encompass a range of types, including new product or service, new process technology, new organization structure or administrative systems, or new plans or program pertaining to organization members” (Damanpour, 1996, p. 694).

In his definition, Damanpour recognised that innovation as an activity has a twofold outcome: it develops and creates new products introduced to the external environment, and it initiates changes within the organisation itself. Damanpour’s view of innovation differs from Van de Ven’s by recognising the development of the role of collaboration between organisational units. Furthermore, innovation, according to Damanpour, requires changes within the organisation, and these changes are a result of the external environment

and external factors and they also influence and affect the external environment. This recognition of the nature of innovation as popularised by Damanpour shows that innovation obliges organisations to modify and develop their practices and activities to achieve strategies that cope with and promote innovation.

More recent studies suggest that innovation can be a means to introducing changes in organisational structure, culture and processes. Moreover, it entails changes both internally, by changing and adapting the structure (Bessant *et al.*, 2005), and externally, by introducing new products as a result of competition. Bessant *et al.*, (2005) claimed that “innovation entails changes of what the organisation is doing as well as core renewal process of the organisation, innovation represents the core renewal process in any organisation. Unless it changes what it offers the world and the way in which it creates and delivers those offerings it risks, its survival and growth prospects” (Bessant *et al.*, 2005, p. 1366).

This definition clearly underlines the role of innovation in changing how the organisation arranges and directs its activities towards innovation, by showing that it requires changes at the inner level. Bessant *et al.*'s (2005) contribution to innovation is far in advance of Damanpour's (1996), as they considered what innovation implies for organisations in terms of changing their structure, culture and processes; Damanpour's (1996) work seems to be generic and implies changes are made to organisations only to cope with the external environment. Bessant *et al.*, (2005) added that innovation is accompanied by changes that develop how organisations perform tasks and organise activities. From the above explanation and the arguments of both Damanpour and Bessant and colleagues, it is clear that Bessant *et al.*'s (2005) contribution regarding innovation offers a deeper understanding and perception of two key issues: what organisations have to do to promote innovation, and what innovation implies for organisations. Birkinshaw *et al.*, (2008) supported Bessant *et al.*'s(2005) view of innovation, with Birkinshaw *et al.*, (2008) defining innovation as “the invention and implementation of a management practice, process, structure, or technique that is new to the

state of the art and is intended to further organizational goals” (Birkinshaw *et al.*, 2008, p. 825).

Moreover, changes in structure and management practices entail changes in the way that organisations introduce their innovations. As stated by Jimenez and Valle (2008) and Johnson *et al.*, (2011), organisations should pay attention to customer needs and market needs in order to identify and develop the required innovations successfully. Johnson *et al.*, (2011) defined innovation as follows: “innovation involves the conversion of new knowledge into a new product, process or service and the putting of this new product, process or service into actual use” (Johnson *et al.*, 2011, p. 296). This definition throws light on the role of customers as targets during the introduction of innovative products, services and processes and entails the introduction of new types of innovation. Johnson *et al.*, (2011) emphasised the role of customers and markets in introducing innovation. The significant difference between Johnson *et al.*, (2011) and previous contributors is that the former focus on the role of external factors, mainly customers. Johnson *et al.*, (2011) addressed the issue of coupling changes within the organisation with the introduction of new products and services in order to achieve successful innovations.

Trott (2012) highlighted the importance of managing organisational activities to promote innovation. Trott’s definition also confirms the role of marketing activities, along with management activities specific to the introduction of innovation. He viewed innovation as a management process and activity: “the management of all the activities involved in the process of idea generation, technology development, manufacturing and marketing of a new (or improved) product or manufacturing process or equipment” (Trott, 2012, p. 15). The distinction between Johnson *et al.* (2011) and Trott (2012) is that Trott’s definition stresses the role of internal processes, especially management processes and activities, viewing innovation as a purely internal process that leads to an outcome, which is new products and services. Johnson *et al.* (2011), however, viewed the introduction of innovation as a process affected by external sources (customers) that gear internal efforts towards producing new products.

Comparing Johnson *et al.*'s (2011) and Trott's (2012) definitions shows development in the understanding of innovation, with recognition of the role of knowledge itself and of translating knowledge into useful concepts and ideas; Johnson *et al.*, (2011) stated that these activities need to be managed by the organisation and to take the form of marketing efforts and management of manufacturing processes. The management of these activities and processes is done by the same individuals who introduced the new ideas. Knowledge stems from employees, the source of ideas and concepts, who translate these ideas into useful and new products. Both definitions recognise different types of innovation (this will be discussed in more detail in the next section), indicating a wide-ranging and expansive view of innovation. As a result, different activities are included in the innovation process, such as collaboration between different units in the organisation and consideration of employees' skills and knowledge, as well as market needs. Table 2.1 summarises development of the definition of innovation by era, in order to arrive at an all-encompassing definition that contains the major elements from the previous definitions.

From the above definitions, it can be suggested that innovation consists of two dimensions: process and outcome. Process entails idea generation and implementation, while outcome entails products or services that differ in their degree of newness (Nylund *et al.*, 2011). Furthermore, most definitions share three main elements: newness, implementation, and interactions and iterative. Newness refers to being new to the market, the industry, the organisation itself or the individual (Sambrook *et al.*, 2011; Johnson *et al.*, 2011). Implementation is related to the application of the new ideas to actual products and concepts (Van de Ven, 1986; Damanpour, 1996). Interaction is related to the collaboration and interaction of different organisational units as well as continuous attempts to develop new products (Trott, 2012).

Table 2.1: Development of innovation definitions by era.

Era	Main focus	Authors
1930s–1950s	Economic value	Dominated by Schumpeter (1930s, 1940s and 1950s)
1960s–1970s	New ideas, competition, R&D, introducing new things	Utterback (1971), Rogers (1962), Daft (1978), Zaltman <i>et al.</i> , (1973), Myers and Marquis (1969)
1980s–2000s	Collaboration, structure, culture, interaction, creative solutions	Van de Ven (1986), Damanpour (1996), Porter (1990), Teece (1997)
2000s–present	Human resource management, market/customers' role, resource exploitation	Chesbrough (2003), Trott (2008), Bessant <i>et al.</i> , (2005), Jimenez and Valle (2005; 2008), Johnson <i>et al.</i> , (2011), Damanpour (2010), Shipton <i>et al.</i> , (2006).

Source: Author.

Consequently, based on the previous arguments and discussion in the field of innovation definitions that have been introduced by various researchers, this study develops a new definition for innovation as:

“The introduction and implementation of new ideas that stem from employees’ knowledge, experience and use of technology. This entails the introduction of new products and services to the external environment as well as the creation of value and competitive advantage for the organisation. ‘New’ could mean new to anyone who perceives the new ideas or products. These innovations require collaboration and interaction of different aspects and units within the organisation”.

This definition, which identifies and recognises employees’ role, interaction, knowledge and skills as well as organisational structure and capability in

introducing innovation, consists of a number of elements. The first is the introduction and implementation of new ideas, the starting point for new products or services. The second relates to employees and their role in using their knowledge, technology and other skills to produce new products based on the new ideas. The third is the outcome of the process of the employees' efforts and translation of ideas – that is, the new or improved products and services. The fourth relates to the value that organisations seek from the new products and services, namely creating value and competitive advantage. The introduction of new products and services to create new value and competitive advantage calls for the fifth dimension of the definition, which concerns organisational arrangements and processes for innovation. These arrangements and activities can take the form of developing organisational structure, management processes, culture and production processes.

The value of the new definition stems from recognising the role of organisational abilities as well as adding value to customers and markets which are recognised as vital elements in introducing innovation (Jimenez and Valle, 2008; Damanpour, 2010). It includes a wide range of innovation types, such as product and process innovation. This definition presents innovation as the result of employees' efforts, ideas and knowledge, which shows the importance of human resources (HR) as the basis of innovation (Zhao *et al.*, 2012). The role of human resources is essential in creating and transforming ideas and concepts into new products and services. It also requires organisational support and a set of practices such as human resource management practices (Scarbrough, 2003; Shipton *et al.*, 2006) that are the result of collaboration and interaction of different units within the organisation, as well as changes in organisational culture and structure (Sambrook *et al.*, 2011; Birkinshaw *et al.*, 2008).

Having introduced the evolution of what is meant by innovation, the next section considers different types of innovation to better understand its different aspects and forms.

2.4 INNOVATION: A TYPOLOGY

This section introduces different types of innovation in order to demonstrate and illustrate the significant and common types that organisations tend to adopt. After a review of the literature, the distinction between different types of innovation is presented.

Since Schumpeter's influential work on innovation, scholars have continually expressed a growing interest in innovation that has spilled over to different fields and areas of enquiry, including technology, psychology, marketing, sociology, business management, etc. The variety of classifications, frameworks, models and definitions of types of innovation makes it challenging to understand the different types, their definitions and attributes and the relationships between them (Christensen, 1997; Sambrook *et al.*, 2011; Chiva *et al.*, 2014). Damanpour (1987, p. 675) argued that "differentiation between types of innovation and stages of adoption is essential in developing realistic theories of organisational innovations".

The wide range of types of innovation emerged as a result of rapid competition, changes in customer demand, reduced life cycle of products, attraction of new customers, entry to new markets and technological advances (Jansen *et al.*, 2006; Johnson *et al.*, 2011; Sambrook *et al.*, 2011; von Zedtwitz *et al.*, 2015). Fundamentally, organisations introduce different types of innovation according to their resources, capabilities, knowledge and market position (Jansen *et al.*, 2006; Hoonsopon and Ruenrom, 2009; Damanpour *et al.*, 2009).

In the past, innovation was perceived as the introduction of new products and services to enhance the economy. This view was famed by Schumpeter in the 1940s and 1950s. Given his economic belief in innovation, Schumpeter introduced types of innovation that suggest economic advances, such as new sources of supply and entry to new markets. The awareness and labelling of types of innovation is imputed to Schumpeter. Schumpeter (1954) distinguished five types of innovation: new markets, new products, new sources of supply, new methods of production and new ways to organise business. New markets refer to entering and establishing new markets to

commercialise products and services. New products are self-explanatory. New sources of supply are about finding alternative ways to supply organisations with raw materials or products, with some sort of advantage such as lower price. New production methods involve using new processes and techniques to introduce the new products. New ways to organise the business are about ensuring management and organisational structure support innovation. All these types hold innovation to be a process rather than an outcome.

Further research along the same lines followed Schumpeter's introduction of innovation types. For example, Knight (1967) suggested the following types, similar to Schumpeter's: product process, people, organisational structure, product and service innovation. Knight's idea of people and organisational structure corresponds to Schumpeter's new ways to organise business, and product process and service innovation correspond to new production methods. Organisational structure refers to actions and activities that people in the organisation follow and interact through, and it includes the introduction of regulations, relations and authority. People innovation includes two options: changes in dismissing or hiring people, and improving and enhancing the behaviours or beliefs of employees through techniques such as education. The distinction between Knight (1967) and Schumpeter (1954) is that Knight did not include markets or new sources of supply as types of innovation. This might be explained by the placing of greater importance on product and process innovation over marketing and sources of supply at that period of time, since product and process innovation were crucial for economic development and industrial growth (Damanpour and Evan, 1984; Tidd and Bessant, 2009).

In the 1970s, the role of technology was recognised, an advance over previous typologies. Daft (1978) introduced technological and administrative innovation. Damanpour and Evan (1984) used similar terms to introduce administrative and technical innovation. Technological innovation refers to the use of technology in the new products and services, while technical innovation (Damanpour and Evan, 1984) indicates technical aspects of the organisation and its activities. Administrative innovation is essentially similar

to Knight's (1967) and Schumpeter's (1954) organisational structure and new ways to organise businesses, and shows no advance on these typologies. Damanpour and Evan (1984) offered only a minor distinction through the introduction of technical innovation.

Research on innovation types has advanced to include the degree of newness. For example, Cooper (1998) introduced six types of innovation, namely technological, administrative, process, product, radical and incremental innovation. The first four are similar to the categories of Damanpour and Evan (1984) and Daft (1978); the newness dimension is represented by introducing radical and incremental innovation. Radical innovation is about developing products with significant changes and enhancement. Incremental innovation relates to small changes in existing products and services. This distinction allows a more detailed description of innovation types, concentrating on the degree of novelty.

Boer and During (2001) acknowledged the following types of innovation: product, process and organisational innovation, while Francis and Bessant (2005) introduced product, process, position and paradigm innovation. Product and process innovation were represented in previous work; organisational innovation was discussed by Knight (1967). Then, in Francis and Bessant's (2005) typology, position and paradigm innovation are introduced. Position innovation relates to the context in which the new products and services are introduced, and paradigm innovation is about changing mental models that affect the organisation's behaviour.

Trott (2008) introduced other categories, adding organisational innovation, management innovation and commercial/marketing innovation to product, process and service innovation. "Organisational innovation could be a new venture division, a new internal communication system, or the introduction of a new accounting procedure" (Trott, 2008, p. 16). Management innovation concerns developing and designing business practices and processes, for example TQM. Commercial/marketing innovation concerns developing approaches to entering new markets and new approaches to existing markets, product wrapping, packaging and design, and financial matters.

Trott's (2008) typologies are similar to previous types of innovation that were introduced by Daft (1978), Damanpour and Evan (1984) and Cooper (1998). Similar typologies have been introduced in a more recent work by Damanpour *et al.*, (2009). Damanpour *et al.*, (2009) introduced the following types of innovation: service, process, technological and administrative innovation, again similar to previous categorisations.

It can be noticed from the above typologies proposed by scholars that the predominant types of innovation that have received considerable attention and are credited with beneficial organisational outcomes are product and process innovation (Damanpour *et al.*, 2009; Tung and Wu, 2012; Sambrook *et al.*, 2011). As stated by Damanpour and Aravind (2011, p. 426), "most studies of innovation, especially those conducted by economists and technology management researchers, have focused on the first two types, making the product-process typology the most widely studied innovation typology". Table 2.2 offers a list of innovation typologies by author.

Table 2.2: Innovation types

<i>Typology</i> <i>Author</i>	Product	Process	Service	Organisational	Administrative	Marketing	Paradigm	Position	Technological	Radical & incremental
Schumpeter 1954	•	•		•	•	•				
Knight 1967	•	•		•	•					
Daft 1978					•				•	
Damanpour & Evan 1984					•				•	
Cooper 1998	•	•			•				•	•
Boer and During 2001	•	•		•						
Francis & Bessant 2005	•	•					•	•		
OECD 2005	•	•		•		•				
Trott 2008	•	•	•	•	•	•				
Damanpour <i>et al.</i> , 2009		•	•		•				•	

Source: Author.

As stated earlier, product innovation entails the introduction of new products or services to customers and markets, while process innovation is about enhancing and improving production methods and operations in the organisation (Trott, 2008; Damanpour *et al.*, 2009). Product innovation is linked to the final products or services that will be introduced to the market and customers, while process innovation is mainly related to the processes and manufacturing of the new products or services. Moreover, process innovation aims to reduce costs and enhance efficiency, distribution and reliability of the new products or services (Damanpour, 2010; Silva *et al.*, 2014).

Product innovation changes the firm's output, while process innovation changes the procedures, methods and routes used in manufacturing the products and services and delivering them to the outside world (Bessant *et al.*, 2005). Moreover, product innovation is driven by customer and market needs – that is, it is externally driven. Process innovation is internally focused and concerns making and marketing products (Damanpour, 2010; Bessant *et al.*, 2005).

Damanpour (2010, p. 997) defined process innovation as “new elements introduced into a firm's production or service operation to produce a product or render a service”. Larsson and Bergfors (2009, p. 262) defined it as “development driven by internal production objectives. Such objectives may be reduction of production costs, higher production yields, improvement of production volumes and product recoveries, environment friendly production, etc”. Mamat and Ismail introduced a definition similar to that of Damanpour (2010) and Larsson and Bergfors (2009). They defined process innovation as “the introduction of a new production method that includes a novel way of handling a commodity commercially and can be applied to the entire value chain process, including manufacturing, data processing, distribution and service” (Mamat and Ismail, 2012, p. 269). All the above definitions of process innovation are of a similar degree and have similar scope, with all recognising its internal focus and changes that may not be recognised by external users and customers.

With respect to product innovation, Anderson and Tushman (1991, p. 27) defined it as “technological discontinuities that advance by an order of magnitude the technological state-of-the-art which characterizes an industry”. Inauen and Wicki (2012) defined product innovation as “the invention and commercialisation of entirely new products or services”. One limitation of these definitions is that they focus on one specific type of innovation, radical product innovation, neglecting other important factors that are essential in promoting product innovation. The role of employees in introducing innovation is missing from their work. Individuals are considered by others as the source of ideas, concepts and knowledge that can be transferred through them into new products or services (Zhao *et al.*, 2012). As mentioned before, product innovation can take different forms, such as incremental or radical, and organisational adoption of product innovation depends on resources, employees’ role, environment and customers (Damanpour *et al.*, 2009).

Damanpour (2010, p. 997) defined product innovation as “new products or services introduced to meet an external user need” and further categorised it as incremental or radical, introducing a different approach or strategy to offer product innovation. Such approaches can take the form of market pull and technology push, resulting in new products to meet customer needs. Another definition that throws light on the importance of marketing new products is that of Jimenez *et al.*, (2010). They defined product innovation as “the development of new or improved products and/or services and their successful introduction into the market” (Jimenez *et al.* 2010, p. 468). Chiva *et al.* (2006, p. 334) defined product innovation as “a process that includes the technical design, R&D, manufacturing, management and commercial activities involved in the marketing of a new (or improved) product”.

All the previous definitions suggest that product innovation entails a degree of novelty in the final products. Moreover, they show that product innovation requires collaboration and interaction inside the organisation. An emphasis on the role of marketing of new products in order to introduce successful product innovation and meet customer demand is highlighted by these definitions.

Chiva *et al.*,’s (2006) definition recognises product innovation as a process that entails a set of practices and activities such as managerial activities and use of technology. In addition, the definition shares elements with Jimenez *et al.*’s (2010) regarding the introduction of new products into markets, which is also emphasised in Damanpour’s definition. These management practices can take the form of applying effective HRM practices (Shipton *et al.*, 2006). Besides all these similarities in what Chiva *et al.*, (2006), Jimenez *et al.*, (2010) and Damanpour (2010) address, all these definitions are recent and include the degree of innovation of new products, which has been clearly addressed by Jimenez *et al.* (2010).

In the light of the discussion and definitions of product innovation above, this study develops a definition for product innovation as:

“Introducing new products or services that are developed through employees’ knowledge and skills in an organisational context that supports new products to the market, customers and the organisation itself and sustains long-term advantage. These new products or services can be totally new or add value and benefit to existing products and services”.

This new definition states that product innovation is the introduction of improved or totally new products. It consists of a number of elements. The first element is the role of employees and their knowledge in introducing new products and services. The second element is recognising the importance of organisational support to promote and introduce product innovation, through either the role of management or administrative activities. The third element is that the new definition identifies the importance of meeting customer and market needs in order to sustain successful product innovation. The fourth element is the degree of novelty: recognising the degree of change in the new products or services.

The value of this definition stems from its recognition of the role of the activities, especially management activities that are required to support and promote product innovation (Cabralles *et al.*, 2008). In addition, the new definition recognises the role of human resources and HRM in the

introduction of product innovation. Different types of innovation are covered in this definition, especially incremental and radical product innovation. The new definition distinguishes employees' role in introducing product innovation, and employees are seen as the source of ideas, knowledge and skills (Zhao *et al.*, 2012; Shipton *et al.*, 2006).

The literature on innovation has recognised product innovation over a prolonged period of research as a main dynamic organisational outcome in creating profit, organisational growth and value (Visnjic *et al.*, 2016; Cooper, 1998). The core value of product innovation stems from its greater potential for 'creative destruction', which embraces risk-taking and uncertainty that has the effect of destroying the existing value of current products and renews that value through new products (Schumpeter, 1942). Normally, the new value achieved by product innovation is characterised as superior (Visnjic *et al.*, 2016). Organisations tend to favour product innovation over process innovation (Lambertini and Mantovani, 2009; Chenavaz, 2012; Visnjic *et al.*, 2016). The importance and value of product innovation stems from its capacity to provide organisations with product differentiation, distinctive, unique and sometimes inimitable specifications, while process innovation helps organisations to improve the process of production and streamline production costs and packaging of new products and services (Lambertini and Mantovani, 2009). Moreover, product innovation is widely recognised as a source of dynamic organisational capability that allows organisations to sustain competitive advantage (Teece, 1997; Zhang, 2011; Eisenhardt and Martin, 2000). In addition, product innovation is considered a primary tool of corporate renewal (Danneels, 2002), because organisations, through product innovation, can combine, use and develop skills, assets and processes in order to create strategic value through products that generate revenues (Zhang, 2011; Eisenhardt and Martin, 2000). As Zhang (2011, p. 120) put it, "the strategic value of product innovation also lies in its idiosyncrasy, that is, product innovation often involves the use of firm-specific resources and processes and is path-dependent". Product innovation, as a result, provides organisations with sustainable competitive advantage in a more significant way than any other type of innovation, even process innovation.

Liao (2006) suggested that product innovation is favoured and preferable as it is more recognisable for markets and customers and for competitors; in addition, it is less complex to adopt. Moreover, product innovation looms and emerges in the market and in customers' awareness more than any other type of innovation as it is tangible and easy for customers to understand. Therefore, more attention is given to product innovation than process innovation. Furthermore, organisations in the technology industry benefit from product innovation as it helps in improving the quality of their products (Chenavaz, 2012), although they enhance production costs by process innovation (Chenavaz, 2012). Oke (2007) conducted an empirical study using interviews and an email survey with 214 senior managers of UK service companies. He found that product innovation is more readily adopted by organisations, especially in the high-tech industry. Furthermore, the outcomes, benefits and value of product innovation are more rewarding for organisations than those of other types of innovation. Product innovation helps in improving market position, financial performance, quality of life and products (Damanpour, 2009; Hoonsoopon and Ruenrom, 2012). It also helps organisations to face the challenge of shortened life cycle of products, diversify, adapt to rapid changes in the environment, create opportunities and find solutions to market threats (Shipton *et al.*, 2006; Ballester *et al.*, 2009; Damanpour, 2009). Therefore, and in the light of product innovation potential value and importance, this thesis focuses on product innovation in studying the relationship between HRM practices and innovation awareness and commitment.

Following the introduction of innovation types and product innovation, the next section looks at the drivers of product innovation to increase understanding of how organisations can sustain and maintain it.

2.5 DRIVERS OF PRODUCT INNOVATION

This section introduces internal and external factors that drive and promote product innovation. Due to its complex nature, innovation requires a set of practices and factors that support and stimulate its manifestation, release and process. Scholars have identified many such factors and drivers (see, for

example, Tidd and Bessant, 2009; Nadler and Tushman, 1997; Damanpour, 2010; Ataei and Sharifirad, 2012).

Nowadays, even large innovative organisations cannot rely solely on their internal resources and capabilities to introduce innovation as a result of spreading knowledge, technology and competition; instead, they need a source of support and knowledge beyond their boundaries in order to sustain innovation (Cassiman and Veugelers, 2006; Chesbrough, 2006; Visnjic *et al.*, 2016).

2.5.1 External Drivers

The aim of this section is to study and explore the role of external drivers that underpin product innovation. This section provides insights into how product innovation is maintained and sustained by external factors and their contribution to the development of innovation. At the end of this section, a summary is presented of the main concepts and themes discussed.

Traditionally, innovation has been characterised as the most influential means of competition in the marketplace (Van de Ven, 1986; Trott, 2008). However, the rapid changes in the market and external environment that surround organisations have formed and presented other factors that are dynamic to promote innovation (Colombo and Cassiman, 2006).

Early studies emphasised that innovation is a result of external dynamics, mainly stimulated by economic activities. The view that innovation is not only driven by external drivers but also influences the external environment was popularised by Schumpeter (1934; 1942; 1954), who saw a need for innovation to develop the economy. New products and services must add value to the economy, and the economic value of innovation was paramount.

Following the Schumpeterian view, scholars have studied innovation and its management from different angles. For example, Rogers (1962) stated that innovation is valuable not only to the economy but also to the individual or the unit of adoption, a view that broadens the Schumpeterian interpretation of the economic essence of innovation. Innovation relates not only to the economy, but also to customers and markets outside it. Recognising

innovation as new to markets led to the signalling of the role of competition in the market. Abernathy and Utterback (1978) stated that innovation is obligatory in order to compete in the marketplace. The increasing rate of competition in the marketplace exerts pressure on organisations to introduce innovation. At the present time, innovation is not only necessary in order to face increasing competition: it is also a condition for survival in the marketplace (Damanpour, 2010; Bessant *et al.*, 2005; Teece, 2007; Tidd and Bessant, 2009).

Tidd and Bessant (2009) added that the first phase of introducing innovation is the detection of signals from the external environment that there is potential for change; for example, technological change in the market is seen as a vital source and driver for change and for introducing innovation. Advances in technology in the market have created a space for developing and improving existing services, processes and products (Ketata *et al.*, 2015). Technology plays an important role in the innovation process as the leading tool for making changes and translating an idea or concept into a product (Damanpour, 2010). As innovation starts with recognition of an idea and concept, transforming it into a useful innovative product or service usually requires the application of technology. Technology is either involved with production techniques or adds aspects to new products (Johnson *et al.*, 2011; Ketata *et al.*, 2015). Therefore, technological advances and changes in the market imply that changes and modifications to the manufacturing processes and products will take place.

Another central driver for innovation from outside the organisation is that of customers. The success of new products depends firmly on meeting customer needs (Bohlmann *et al.*, 2013). New products can fail in the market if they do not meet these needs. From the innovation perspective, customers can be divided into two categories. The first contains customers who are considered to be innovators. These customers are seen as an important source of ideas and concepts for new products and usually they are lead-users (Hippel, 1994). The second category is seen as less innovative. These customers suggest incremental and minor changes to products that are low-risk. Moreover, increasing and rapidly changing customer demand creates a

pressing need for organisations to introduce product innovation (Berry *et al.*, 2013; Damanpour *et al.*, 2009; Bohlmann *et al.*, 2013). Additionally, reducing the life cycle of products is nowadays considered a market theme (Buffington and McCubbrey, 2011; Johnson *et al.*, 2011; Visjnic *et al.*, 2016). This means that organisations need to continuously introduce and develop new products, becoming more profitable and successful if they adopt a market-oriented strategy accompanied by product innovation activities. Organisations that are responsive to market needs will offer radical and incremental products (Hoonsopon and Ruenrom, 2009; Salavou, 2002; Lynch *et al.*, 2016). Introducing innovation based on market and customer needs helps not only in introducing successful innovations but also in identifying the degree of newness in terms of radical or incremental product innovation. Market orientation and product innovation interact and can enhance the performance of the organisation (Hoonsopon and Ruenrom, 2009; Jimenez and Valle, 2008; Lynch *et al.*, 2016).

Government policy has an impact on the innovation that organisations adopt (see, for example, OECD, 2005; 2009). Policies and regulations that support innovation policy have become an integral part of supporting innovation activities (Ketata *et al.*, 2015), and considerable expense and public funds are directed towards promoting and supporting research, technology, science and various industries (see, for example, OECD, 1999; 2005). In addition, government policy can help in gaining access to resources. Such programmes and budgets are supported by government and are designed to support competitive advantage internationally (OECD, 2009; Howell and Higgins, 1990). These programmes support technological advances and technological innovations (OECD, 2005; Zhao, 2012).

In the light of the previous arguments, it can be said that competition, customers, technology and government are the main external drivers in promoting product innovation. Competition, for example, means that innovation is currently considered as essential to the survival of the organisation. Customers inspire organisations regarding the kind of products or developments they want, and it is important to meet these needs in order to guarantee the success of new products and services. The role of

technology can be summarised as fuelling innovation, as it helps in simplifying and handling the innovation process; technology can also be one of the main features of innovative products. Regarding government policy, it helps in supporting and acquiring innovation by encouraging economies and businesses to facilitate innovation processes. This may take the form of funds and access to resources.

Generally, research on innovation at the external level is complex (Rosegger, 1996). Nevertheless, it is not sufficient for organisations to merely rely on external sources, nor, equally, on internal sources (Paladino, 2007). Tactically, combining both external and internal sources for innovation is a prerequisite for the introduction of innovation (Cassiman and Veugelers, 2006; Paladino, 2007). Relying on internal capabilities and resources to introduce innovative products may result in a poor performance and in organisational life, which donates adopting a closed innovation approach to develop and introduce new products and services. This approach is no longer rewarding, some researchers argue (see, for example, Chesbrough, 2003; 2006). Combining both internal and external capabilities, and knowledge and resources, will lower the risk of failure of innovations and create the opportunity to broaden, enhance and gain knowledge, skills, capabilities and resources (Chesbrough, 2003; 2006).

2.5.2 Internal Drivers

This study of the role of internal factors in promoting product innovation starts by highlighting the importance of internal drivers for product innovation. The drivers are identified from the literature and some case studies are examined. This will help in locating the research, which focuses on the specific internal drivers that are discussed later in this thesis, mainly HRM practices. The main themes and arguments in the literature regarding internal drivers of product innovation are summarised.

A considerable number of scholars have studied the determinants of innovation and its processes, along with the role of internal drivers for innovation (Trott, 2012; Jimenez and Valle, 2008; Jimenez *et al.*, 2010; Nadler and Tushman, 1997; Paladino, 2007; Visjnic *et al.*, 2016; Ketata *et al.*,

2015). Since innovation is a complex process and entails multiple challenges and difficulties, it requires collaboration and the interaction of various factors, such as knowledge, networks, skills and open collaboration with the external environment. However, the literature on innovation management shows that there are no specific guidelines that guarantee the success of innovation. Rather, internal drivers and sources for innovation are varied and range from employees, R&D, collaboration among departments, organisational culture, knowledge acquisition and sharing, and top management support, to human resource management (Tidd and Bessant, 2009; Cassiman and Veugelers, 2006; Ketata *et al.*, 2015).

The literature shows that the internal drivers of product innovation that are mainly emphasised are organisational structure, strategy, culture and human resources.

Organisations are exposed to uncertain outcomes when introducing new products as a result of the traditional structure and strategy that they follow (Hoonsopon and Ruenrom, 2012; Visjnic *et al.*, 2016). Strategy and structure play a significant role in the introduction and success of product innovation, and “organisations may benefit more from learning to innovate in all areas rather than focusing on acquiring knowledge in one because innovating across organizational units could influence exchanges with clients, customers and other key constituencies, enable managers to choose strategies to manage resource dependencies with the external units, and maintain the flow of resources to the organization to ensure adaptive behaviour” (Damanpour *et al.*, 2009, p. 658).

This shows the importance of organisational strategy in promoting product innovation and also shows that there is a need for organisations to adapt their structures, their routines of work and the way they do things in order to create an environment that is suitable for innovation. Organisations should be structured in such a way that they can handle external changes and challenges. Furthermore, organisational strategy is related to managing resources and capabilities and gearing them towards innovation.

As employees are the source of the ideas, the ability to transfer these ideas and concepts into developed and innovative products is supported by the management, strategy and structure of the organisation (Jimenez and Valle, 2008). Due to rapid competition, increased customer demand and diffusion of technology, organisations should have a flexible structure that is able to support strategic actions and events such as innovation (Hoonsopon, and Ruenrom, 2012; Jimenez *et al.*, 2010). Organisational structure plays a vital role in sustaining innovation (Trott, 2012). Organisations need to collaborate and manage the work of different departments together. Successful innovation depends on how the organisation correlates and coordinates various activities internally, such as inputs, performance of tasks and the functions of different departments (Tidd, 2001). Moreover, innovation requires a set of arrangements such as the structure of work, the work, the people who perform the work, and informal arrangements (Nadler and Tushman, 1997).

The new ideas should add value not only to product innovation but also to the organisation itself, as well as entailing changes within the organisation if a new product innovation is introduced (Jimenez and Valle, 2005). A flexible structure that is characterised by being open and adaptive to internal and external environments helps in acquiring knowledge, skills, motivation and capacity to innovate. Dougherty and Hardy (1996) added that product innovation is a driver of organisational change. They conducted a study across 96 firms in Canada, the USA and the UK and found that organisational practices, information transfer, networks and organisational structure can stimulate innovation. However, they also found that for the majority of companies, product innovation is the main driver of change and of modification of the structure of the organisation. This shows that the development of product innovation is a complex process and has to be integrated in departments' work streams in order to sustain a continuous product innovation stream in the organisation. In addition, close collaboration and close integration of the development of new products and organisational elements is essential, especially structure, strategy and culture. A recent study by Hughes *et al.* (2012) supports the findings of Dougherty and Hardy's

(1996) study. In their study of 127 German firms, Hughes *et al.*, (2012) found that organisations that develop knowledge and create space for knowledge, such as through acquisitions and alliances, will strengthen innovation performance and increase the capacity for successful innovation. The study reveals the importance of organisational structure and strategy in promoting product innovation. In addition, the above studies show that organisational structure and strategy should be focused more on practices and procedures, such as knowledge and learning, than on the innovation process itself.

Similarly, in a survey of 1955 small and medium-sized enterprises (SMEs) in the UK conducted by a centre of research at Cambridge University, Hughes *et al.*, (2012) found that organisational structure, decentralisation, decision-making and arrangement of tasks and plans in the organisation play a significant role in sustaining innovation. They added that in high-tech firms decentralisation and informal structure are required to promote innovation. Turbulent environments necessitate collaboration between employees and top management in order for them to make better decisions and perform tasks efficiently. This shows that organisational structure and strategy can impact on the ability to introduce product innovation in several ways. Furthermore, organisational structure and strategy can impact on the decision-making process and decentralisation, which can in turn have an impact on the development of practices and procedures that stimulate product innovation.

Another essential factor that promotes innovation is organisational culture, which is seen in the core of the innovation process (Tushman and O'Reilly, 1997). Organisational culture can take two forms: a market-oriented culture, or organisational belief in innovation from employees (Johnson *et al.*, 2011). In some organisational cultures, innovation is a core value, which encourages employees to gear their efforts towards producing new products and services. Schein (1992) conceptualised organisational culture as the beliefs and values that guide how employees perform tasks and how they are expected to behave. In addition, culture is generally an invisible social factor, although very influential and persuasive (Schein, 1992). Tushman and O'Reilly (1997) added that creativity and innovation are embedded in the

culture in different ways, through socialising, practices and the value of work. Culture is believed to be a source of competitive advantage (Barney, 1991; Tushman and O'Reilly, 1997). Individuals inside the organisation are driven and affected by their culture in the way they communicate, interact and perform tasks (Ataei and Sharifirad, 2012). Culture plays an essential role in the acceptance of change and innovation, and in the belief among individuals in innovation as an important tool (Ataei and Sharifirad, 2012; Johnson *et al.*, 2011). In a study that included six innovative large Iranian auto companies with a total of 245 employees, Ataei and Sharifirad (2012) found that organisational culture plays an important role in promoting innovation. They added that organisational culture can regulate and control the understanding of adaptability to the business mission in sustaining innovation.

Market orientation is considered to be an organisational culture comprising customer orientation and competitor orientation (Naver and Slater, 1990). Market-oriented cultures view innovation as necessary to meet customer needs and market demand. Satisfying customers is the core value for market-oriented cultures. This helps in acquiring satisfied and loyal customers who will help the organisation to promote and facilitate the bottom line of innovation (Naver and Slater, 1990; Hogan and Coote, 2014).

Some cultures view innovation as essential for the survival of the organisation; on the other hand, other cultures view innovation as optional (Colquitt *et al.*, 2009). So, organisations need to implement a culture that believes in creativity and innovation and is committed to organisational beliefs. Most importantly, culture plays a role in creating employees' attitudes, participation and interaction through a system that controls their behaviour (Colquitt *et al.*, 2009). This view is supported by Tidd *et al.* (2001), who claimed that organisational culture and human resource management have an influence on how employees work and perform tasks together. Interaction that is supported by an organisational culture that believes in innovation and human resource management in turn supports the promotion and development of new products.

Technically, organisational knowledge is considered as a gateway to acquiring inputs in the form of ideas, data and information, which are raw materials for the innovation that is introduced and used by employees. Knowledge forms the basis of innovation and any process within innovation development (Kuo, 2011). For organisations to promote innovation, knowledge hubs and knowledge sharing are vital in facilitating new ideas, solving problems and the process of innovation (Kuo, 2011). There are two main criteria for organisations to promote knowledge effectively: knowledge creation and acquisition, and knowledge sharing (Jansen *et al.*, 2006). Knowledge acquisition and creation can be maintained through learning and experience and can be sustained by training and top management support (Jansen *et al.*, 2006). Likewise, knowledge sharing can be sustained through collaboration and support from management (Jansen *et al.*, 2006). A flexible organisational structure is required to enable the flow of knowledge within the organisation (Kuo, 2011; Sambrook *et al.*, 2011; Nadler and Tushman, 1997). This shows the complexity of the innovation process, which requires the support of multiple agents (organisational structure, knowledge, culture, R&D, etc.).

Given the complex and dynamic environment required for adopting innovation, organisational performance must maintain and support the innovation process (Dobni, 2008). As innovation aims to introduce new products and services, it is more common for organisational performance to take the form of marketing and manufacturing performance (Dobni, 2008; Delaney and Huselid, 1996). The manufacturing aspect of organisational performance is reflected in the quality of the products (Delaney and Huselid, 1996). On the other hand, the marketing aspect of organisational performance is regarded as meeting customer demand, creating value for customers and satisfying them (Dobni, 2008; Delaney and Huselid, 1996).

Another important dimension of organisational characteristics that has been widely emphasised within previous studies on product innovation is the human factor, signified by human resources (HR). HR host and introduce ideas, knowledge, skills and experience that are central to early innovation processes. In addition, HR translate, modify and implement the new ideas

into actual products, processes and services. In simple terms, all the stages of introducing innovation are powered and run by HR (Shipton *et al.*, 2006; Jimenez and Valle, 2008; Gupta and Singhal, 1993). HR can enjoy and experience creativity, problem solving and skills to a greater extent through HRM. Although HRM is vital in stimulating and supporting product innovation, as addressed by a number of scholars, more research is required on the role of HRM practices (Shipton *et al.*, 2006; Zhao *et al.*, 2012). HRM practices play a significant role in sculpting human resources and developing their ability to innovate, in which developing and promoting employee skills, knowledge, motivation and rewards that can support the innovation process (Scarbrough, 2003; Cabrales *et al.*, 2008). An in-depth discussion of the role of HRM practices is presented in the next section. While the importance of HRM practices for innovation is broadly recognised and addressed, it is still narrowly measured, reflected and studied in innovation studies, and how it relates to product innovation has so far received little attention (Zanko *et al.*, 2008; Shipton *et al.*, 2006; Jimenez and Valle, 2008).

Generally, studies show the positive effect of a number of HRM practices on innovation and performance, such as training, staffing and rewards. HRM practices may positively enhance employees' attitudes and behaviours and play a role in the exploration of problems as well as knowledge exploitation (Boxall *et al.*, 2011). HRM practices create platforms for employees, allowing them to develop the skills required to solve particular problems, and reduce complexity that can be significant for innovation (Zhao *et al.*, 2012; Hoonsopon and Ruenrom, 2009; Jimenez *et al.*, 2010; Shipton *et al.*, 2006; Scarbrough, 2003).

In the light of the previous arguments, and as suggested by the literature on product innovation, internal drivers of product innovation oscillate between organisational culture, structure, strategy and, more recently, human resource management practices. Organisational strategy and structure have a positive impact on product innovation by adopting a flexible structure and also a strategy that contains practices and procedures to stimulate innovation and affect the decision-making process. Organisational culture has a positive impact on product innovation by building an environment for employees that

is based on a belief in innovation. Recently, studies on product innovation and HRM practices have suggested that human resources have the greatest impact on product innovation. Human resources are the source of new ideas; they translate these new ideas into concepts and products and provide solutions to problems and challenges. The role of HRM practices can be profitable and beneficial for both employees and organisations by stimulating skills and sharing knowledge, loyalty, commitment and motivation at work. These intriguing findings promoted the need for this research study.

In considering HRM practices, this study investigates the role of internal drivers in promoting product innovation, attempting to understand the relationship between HRM practices and innovation. In addition, as innovation originates from the ideas and knowledge of individuals, it is vital for innovation management to be looked at from an internal perspective in order to facilitate and smooth the occurrence of innovation. Moreover, developing new products and services largely depends on specific skills, competences and capabilities that members of the organisation possess (Riege and O'Keeffe, 2007; Teece, 2007; Chen *et al.*, 2016). These competences and capabilities provide the organisation with the ability to exploit technology and customer needs, reduce time to market and understand competitors. Such competences create the absorptive capacity for innovation that is seen as an antecedent to innovation. Organisational internal aptitude for innovation has been presented in starkly polarised terms in the literature, showing that organisational performance, structure, knowledge and culture are foundations for innovation promotion. Similarly, external drivers of innovation are important but are originally managed and supported by the existence of intra-organisational competences and skills that prioritise internal drivers of innovation. Nevertheless, innovation requires both external and internal drivers (Riege and O'Keeffe, 2007; Cassiman and Veugelers, 2006; Madsen and Leiblein, 2015). There has been extensive research on drivers of innovation recognised as providing a little attention or neglecting the role of people management in the process of innovation. However, recent studies on the impact of people management activities have symbolised HRM practices to influence innovation. Considering the role of

HRM practices in promoting innovation have started to challenge the traditional theme of previous studies and explore the role of HRM practices underpinning innovation. So, in the light of previous arguments, internal drivers, along with HRM practices, are considered in the proposed model in studying the role of HRM practices; investigating the role of internal drivers in promoting innovation; and examining whether HRM practices will have a greater impact on innovation.

2.5.2.1 Innovative Work Behaviour:

As discussed previously in this chapter, innovation is a source of renewal and survival for organisations. A fundamental trigger for innovation is employees' capacity and willingness to innovate, introduce new ideas and be responsible for implementing these ideas. Scholars have regarded employees' willingness and ability to introduce new ideas and innovate as 'innovative work behaviour' (IWB) (Bysted, 2013; Janssen, 2000; West, 1989). The significance of IWB is that it can leverage organisational latitudes for effective performance, operation and more principally long-term survival (Janssen, 2000; Lee, 2008; Van de Ven, 1986; Oldham and Cummings, 1996). IWB has received growing interest and it is often conceptualised as central in studies seeking to understand innovation (Amabile *et al.*, 1996; Lee, 2008; Miron *et al.*, 2004; Janssen, 2000; Bysted, 2013).

While there is no universal definition for the term 'innovation', as mentioned earlier, definitions for IWB seem to be more homogeneous and share more commonality in the research on innovation and IWB. For instance, Janssen (2010, p. 288) defined IWB as "the internal creation, introduction and application of new ideas within a work role, group or organisation, in order to benefit role performance, the group, or the organisation".

A similar definition was offered by Jong and Hartog (2010), who defined IWB as "an individual's behaviour that aims to achieve the initiation and intentional introduction (within a work role, group or organization) of new and useful ideas, processes, products or procedures" (p. 24). Both definitions share certain elements; they are focused on the generation of ideas and on employees' intentions and creation of these ideas to benefit the organisation, working group or unit. Additionally, both definitions signify the value of IWB in

enhancing organisational performance by offering new products, processes or services.

As suggested by Bunce and West (1994), employees perceive innovation as a high job demand and heavy workload. Innovation creates higher job demands by its nature as being multifaceted, requiring resources, collaborations and assets. IWB is a response from employees under high pressure, especially if they are rewarded, motivated, skilled and prepared to facilitate innovation processes. IWB acts as a tool that enables employees to cope with complexity, dealing with problem-focused tasks and with intensified professional demands (West, 1989; Janssen, 2000).

According to Scott and Bruce (1994), IWB consists of a number of essential elements. These elements are idea generation, idea promotion and idea realisation. Idea generation is regarded as the introduction of new ideas that might stem from current challenges or the need to perform at higher levels in the market. Idea promotion concerns employees generating ideas and looking for supporters, sponsors and backers and social interaction with other members of the organisation to obtain the power required to promote the idea and stand behind it. The third dimension proposed by Scott and Bruce (1994) is idea realisation, which is concerned with producing a model, sample or prototype of the new innovation and testing it within the organisation or working group.

Similarly, Jong and Hartog (2010) introduced four dimensions of IWB that seem similar to the ones offered by Scott and Bruce (1994). Jong and Hartog (2010) identified that idea exploration, idea generation, idea championing, and idea implementation are the main dimensions of IWB. Idea exploration is the process of finding gaps, identifying potential problems and searching for solutions to existing challenges. Idea generation is the process of introducing and formulating new ideas following the exploration process. This could be improvements to products or services or entry to new markets. Idea generation relies on the information gathered and reorganisation. The next step is idea championing. This is similar to idea realisation as proposed by Scott and Bruce (1994), and it relates to the support of other members in the organisation for the new idea and collaboration with them in connection to it.

The final step is idea implementation, where ideas are actually translated into producing an end product. Jong and Hartog (2010) added that idea implementation goes beyond that to form part of work behaviours and attitudes. What distinguishes Jong and Hartog's (2010) dimensions from Scott and Bruce's (1994) three dimensions is the identification of a pre-step for idea generation, which is idea exploration. The similarities, on the other hand, suggest that IWB centres on ideas; in other words, it points towards the individuals behind these ideas: employees.

Moreover, all elements of IWB require focus on skills, knowledge, collaboration, communication and employee development. These prerequisites of IWB can be shaped and developed through HRM practices. As innovation is a multifaceted process regarded as being a discontinuous activity, employees are expected to be involved at any time and at any stage or level of activity during the combinations of innovation processes, activities, and resources. HRM practices are crucial in developing levels of skill, knowledge, teamwork, involvement and commitment, which are central to IWB. Furthermore, to promote IWB the research characterised two elements: job characteristics and organisational practices (Miron *et al.*, 2004; Bysted, 2013). Job design is viewed as a potential outcome of job interventions, autonomy and collaborations (Bysted, 2013), which seems to support the idea championing and promotion dimensions of IWB discussed above. Organisational practices are defined as practices or settings that allow for motivation and opportunity to promote IWB (Bysted, 2013).

IWB, however, demands some level of reward, compensation and motivation to be offered to employees (Janssen, 2000).

Moreover, if innovation is to be fostered, organisations are required to create a suitable internal environment to promote employees' abilities and willingness to be innovative (Dobni, 2010). A vital factor in promoting IWB is innovation trust (Bysted, 2013), where it lowers the perceived risk or reactions of the organisation and its members as a result of IWB.

Innovation, especially at the start, involves an element of chance in terms of opportunity discovery and the arising of challenges that might be the starting point for innovative thinking (Jong and Hartog, 2010). Improving current

conditions and dealing with possible challenges can be a generator for IWB and responding in forms of innovative products or services. There are, according to Drucker (1985), several sources of opportunity that can be a driver for innovative activities. This includes gaps between what is and what should be, unpredicted failure or success, needs imposed by a process in reaction to challenges, changes and instability in the market or industry, changes in demographics such as in the workforce, perception change, and the emerging of new knowledge.

The utilisation of these opportunities is strongly associated with IWB (Jong and Hartog, 2010; Van de Ven, 1986; Bysted, 2013). The outcome of the IWB, in addition to increasing the capacity to innovate and promote innovation, can be positive for the organisation and employees. For an organisation this takes the form of enhanced performance, competitiveness, entry to new markets and financial gain. Employees can benefit from greater rewards, appraisal, satisfaction, motivation, development and knowledge.

From the above discussions it can be concluded that IWB is integrated into employees' willingness to take risks, approach problems, create value and use knowledge and other factors that are related to their innovative behaviour. The behavioural attitude to being more innovative, principally, rests on employees' introduction of new ideas and ways to implement these ideas. Ways of implementing these ideas depend more on the organisation's arrangements and environment. New ideas can be captured and acquired through experience, knowledge and opportunity. Ideas are the foundations of innovative products, services and processes. Individuals are those who "develop, carry, react to, and modify ideas" (Van de Ven, 1986, p. 592).

In order to place this research in an appropriate context regarding HRM practices and innovation, and to present the basis for and motivation behind the role, importance and significance of HRM practices in supporting innovation and competitive advantage, the following section introduces radical open innovation followed by sections for HRM and its definition, importance, main arguments and strategic models.

2.6 RADICAL OPEN INNOVATION

As mentioned earlier, innovation requires a set of antecedents and drivers to enable successful implementation of product innovation. Radical innovation, however, requires a set of complex organisational assets, arrangements and resources. Moreover, radical innovation is promoted when organisations adopt mechanisms that are organisation-specific (Ritala and Hurmelinna-Laukkanen, 2013). This allows organisations to secure their benefits and broaden the potential positive outcomes of their activities, especially with respect to innovation (Ritala and Hurmelinna-Laukkanen, 2013).

Organisations are at risk of losing their leading market position, competitiveness and dominance when radical products are introduced (Hermann *et al.*, 2006). At the same time, organisational R&D, resources, technological advances and abilities are inevitably limited given current competition and changes in the marketplace. Closed innovation limits an organisation's ability to broaden its knowledge, skills and resources. Therefore, open innovation is recognised as more effective in expanding organisational borders and enabling organisations to access new knowledge, resources and skills.

Adopting radical innovation necessitates more time and resources and involves high levels of uncertainty (Holahan *et al.*, 2014). The success of product innovation, according to many studies, depends on a number of factors such as satisfaction of customer needs, outperformance of competitors, the diversity of the teams involved in the new product development, and highly involved, engaged and committed HR (van der Panne *et al.*, 2003; Slater *et al.*, 2014). Additionally, a crucial antecedent and success factor for radical innovation is organisational capability to acquire rare, inimitable resources, skills and competences (Slater *et al.*, 2014).

Therefore, as proposed by a number of scholars, the use of external resources and networks can significantly influence the implementation and introduction of product innovation (Holahan *et al.*, 2014; Kyriakopoulos *et al.*, 2016; Leenders and Dolfsma, 2016). The use of external networks promoted by open innovation provides organisations with open sources for

collaborative innovation, which allows organisations to access skills and knowledge and, in many cases, customers, suppliers and other friendly collaborative organisations (Ritala and Hurmelinna-Laukkanen, 2013). While innovation is risky business, organisations can direct their efforts towards being collaboratively consistent in promoting innovation (Baker *et al.*, 2016).

The implementation of radical innovation demands technological platforms and advances that support innovation (Fenech and Tellis, 2016; Christensen, 1997; Sood and Tellis, 2005). Open innovation facilitates the process of collaboration with external networks, where significant benefits can be secured, especially knowledge and resources, as well as recognising the introduction of new products that can disturb existing ones or render them obsolete by the use of new technology (Tellis and Sood, 2010). In this regard, the time factor is central and can either strengthen the organisation's position in the marketplace or lead to more disruption and loss. The time required to respond, act and innovate can be optimised by the use of open innovation.

Being open to collaboration advances the opportunity to access and preserve valuable resources and inputs that are perceived as being more beneficial than inserting raw information or depending on internal abilities and knowledge (Baker *et al.*, 2016). Open innovation and the use of external networks can be utilised as an alternative approach to interpretations and use of technologies. The ability to introduce radical new products lies in the capacity to enable multiple interpretations and exploitations of new and existing resources and knowledge (Baker *et al.*, 2016; Atuahene-Gima and Murray, 2007). In addition, external networks can reduce levels of complexity and time required for radical innovation (Baker *et al.*, 2016; Chesbrough, 2006).

Radical innovation is widely dependent on organisational competences, which are considered to be among the most significant dynamics and determinants of innovation. In this regard, open innovation and external networks can support product innovation by preventing competence traps

(Baker *et al.*, 2016; Levinthal and March, 1993). Competence traps take place when organisational practices lead to a specific outcome and rapid changes occur in the markets, in customer needs and in technologies, which may result in rendering these outcomes, and the efforts required for these outcomes, obsolete, with no added value (Baker *et al.*, 2016; Levinthal and March, 1993).

Moreover, the life cycle of current products is reduced and face rapid turning points (Golder and Tellis, 1997; Markovitch and Golder, 2008; Fenech and Tellis, 2016); therefore, organisational efforts and the need for transition and replacement of existing products frequently increase (Danneels, 2004). In the light of this, and to face these challenges, organisations are ought to introduce radical innovation, aided by collaboration with external networks through open innovation. The failure to conduct appropriate transitions on time may result in negative impacts on competitiveness and on customers; as a result, open innovation can support the process of transition and deliver radical innovation in a suitable time frame (Inauen, and Wicki, 2012; Fenech and Tellis, 2016).

As innovation, especially in radical forms, requires access to new knowledge and the combination of new knowledge with existing knowledge, open innovation and external networks provide the organisation with the opportunity to utilise social capital effectively. This can result in acquiring new knowledge, increasing levels of confidence in the knowledge that is already possessed and developing mental models to effectively exploit and interpret the new knowledge (Baker *et al.*, 2016). New knowledge acquired from open innovation and external collaborations can have greater potential impact and benefits than the knowledge and resources already existing within the organisation. According to Ahuja and Lampert (2010) and Baker *et al.*, (2016), externally acquired knowledge and resources follow different processes and routines when implemented into activities and processes; they do not follow the existing filtering process, in comparison to existing knowledge and resources. This creates potential for greater benefits since existing knowledge and resources are biased by mental models of employees and decision-makers. Therefore, accessing new and different

domains of knowledge and resources exposes the organisation and decision-makers to new technology and predominantly to new logics and solutions that can be central challenges and problems such as rapid competition. Unsurprisingly, the greatest challenge that organisations in most competitive industries and sectors face is to innovate while maintaining growth.

Recent studies on innovation management have revealed that there is a gap in the understanding of and practical implementation of open innovation (Chesbrough, 2006; West and Gallagher, 2006; Gassamann, 2006; Inauen and Wicki, 2012; Holahan, *et al.*, 2014).

Although the benefits of open innovation are widely addressed and agreed on, there is still a lack of research on the impact of adopting open innovation on innovation performance (Inauen and Wicki, 2012; Laursen and Salter, 2006; Chesbrough, 2006). Most previous studies have focused on the process of adopting and implementing open innovation, whereas there is a lack of understanding of its implications for innovation performance. Recent studies have started to examine the impact of open innovation on innovation performance and outcomes. The ability to gain more profit and growth and introduce breakthrough products was among the main findings of these studies. However, more research is required in this regard.

For example, Inauen and Wicki (2012) conducted a study in 141 companies in Germany, Switzerland and Austria to study the impact of open innovation and external sources on innovation performance. They found significant and positive support for the role of open innovation in enhancing organisational performance and innovation outcomes in terms of rate of success in new products. In addition they tried to examine the impact of open innovation on radical innovation, and found that radical innovation in this case will generate more benefits and positive outcomes for organisational processes, especially for innovation performance.

A recent study, conducted in the USA by Baker *et al.* (2016) and including 1978 line and middle managers, found that the use of external resources and networks has a positive impact on innovation. They found a positive

correlation and impact of the use of open innovation to utilise higher levels of innovation performance.

Enkel and Gassamann (2008), in their study with 144 European companies, found that there is a positive impact of the use of open innovation for the organisation and its activities. They found that the use of open innovation in a form of outside-in process helps the organisation to acquire new knowledge and skills and promote innovation efficiently.

However, Enkel and Gassamann conducted another study in 2008 with 107 European SMEs and large companies. They showed that, despite the benefits and positive outcomes of open innovation, it may lead to loss in knowledge, higher coordination costs, and loss of market leadership and control.

These studies and findings are focused on open innovation to enhance innovation performance; however, they fail to address the degree of innovativeness involved in open innovation. In addition, these studies propose that organisations are highly recommended to protect themselves when adopting product innovation. Higher costs and loss of knowledge, skills and leadership in the marketplace are risks for organisations that innovate openly.

Despite the above-mentioned benefits of open innovation for the promotion of radical innovation, organisations adopting open innovation must be aware of the risk of imitating and being outperformed by collaborators, especially in the case of radical innovation. Organisations are encouraged to create barriers and protect themselves in order not to lose the benefits of innovation or their market position (Ritala and Hurmelinna-Laukkanen, 2013). Organisations with collaborations and open innovation are more likely to reap and share the same tactics, knowledge and resources with their collaborators. This can present a great potential threat to organisational ability to acquire rare and inimitable resources, particularly from collaborators. Therefore, organisational-specific arrangements and barriers are more likely to prevent and protect organisations from their collaborators and competitors. There is a need to develop a set of complex organisational tactics such as intellectual

property rights, lead times and HRM practices (Ritala and Hurmelinna-Laukkanen, 2013). Open and collaborative innovation received a great interest and studied widely, however, organisation-specific success factors are not studied exhaustively. Organisations are required to protect and secure themselves and their intellectual assets to generate greater benefits on innovation outcomes. In the light of this, literature on organisational and innovation management proposes that HRM practices can enable organisations to isolate and minimise the risk of collaboration and imitation that may stem from being open to collaborations (Ritala and Hurmelinna-Laukkanen, 2013).

Research on HRM practices and innovation remains scant, as discussed in Section 2.5.2. Researchers have recognised that HRM practices may go beyond enhancing organisational performance. HRM practices, as mentioned earlier, are considered as internal drivers for innovation. HRM is recognised as an organisation-specific asset that can be rare, inimitable and unique for the organisation. The scope of this research is to study the role of HRM practices in promoting innovation. Additionally, although the value of HRM practices for innovation is recognised, and while the literature offers various suggestions for what can drive and enable innovation, these suggestions seem to fail to distinguish between radical innovation and incremental innovation. Rather, the literature on innovation and its typologies largely tends to address and highlight issues relating to the volume of resources, time, technology and degree of complexity required.

Several scholars, as noted by Holahan *et al.*, (2014), have argued that “what may be best practice for the development and incremental innovations may be detrimental to the development of radical innovation” (p. 329). Therefore, and as suggested in the above discussion, the research aims to study the relationship between HRM practices and radical open innovation: more clearly, the relationship between HRM practices and employees’ awareness of and commitment to radical open innovation.

2.7 HRM: IMPORTANCE AND SIGNIFICANCE

In the 1980s and 1990s, the term 'human resource management' became a fashionable expression in both the UK and the USA, replacing existing terms such as 'personnel management', 'labour relations', 'industrial relations' and 'employee relations' (Beardwell and Claydon, 2010; Redman and Wilkinson, 2006; Edgar and Geare, 2009).

The role of HRM has developed and gained importance as a result of organisational change in response to global economic competition, high-velocity environments, skills gaps, technological advances and globalisation (Redman and Wilkinson, 2006; Ferguson and Reio, 2010; Piening *et al.*, 2014; Hauff *et al.*, 2016). Consequently, organisations have responded to these challenges by considering more strategic arrangements such as downsizing and decentralisation. Moreover, organisations are becoming more flexible, less hierarchical and more autonomous, as well as being more open to new programmes and waves of organisational change and development in areas such as performance management, total quality management, learning organisations, organisational cultural change, and business process reengineering (Sheehan, 2005; Edgar and Geare, 2009). The types of employees and workforces needed for this openness and how these employees should be organised have also been reconsidered.

A potential positive impact of HRM practices is to create a supportive organisational environment and help reduce work stress, complexity and competition, yet the general picture of the role of HRM needs more research (Wright *et al.*, 2005; Shipton *et al.*, 2005; Ferguson and Reio, 2010). Recent studies have attempted to provide a better understanding of the role of HRM practices, extending beyond the traditional recruitment and training of employees (Prowse and Prowse, 2010; Wood and Wall, 2005; Carmeli and Tischler, 2004). A recurring theme is how HRM practices can enhance organisational performance. HRM theorises that human assets are the sole source of sustainable competitive advantage (Boxall and Purcell, 2003). Much of the research in this area is associated with the resource-based view (RBV). RBV theory proposes that competitive advantage depends on organisational resources that are characterised as being valuable, rare,

inimitable and non-substitutable (Barney, 1991). The theoretical perspective of RBV states that the key value of human resources is value-creation processes that are difficult for competitors to copy: “companies can copy one another’s technologies much more easily than they can their human resource capabilities” (Wood and Wall, 2005, p. 430).

In addition to the RBV, Porter’s (1985) model for sustained competitive advantage (SCA) shows that HRM can serve organisational competitive advantage. The SCA model suggests that competitive advantage can be sustained if the organisation is able to lower costs or achieve and deliver benefits that competitors cannot offer. Porter (1985) focused on the intangible assets of the organisation that can deliver differentiation from competitors such as skills, knowledge and organisational culture. These characteristics of the organisation can be attained and developed through HRM practices that focus on building skills, knowledge, networks, team working and motivation and enhancing organisational performance.

HRM practices help organisations in acquiring tacit knowledge, crafting skills, forming corporate behaviours, attaining a specific organisational culture and allowing complex interaction between employees, knowledge and organisational goals and objectives (Ferguson and Reio, 2010; Atkinson *et al.*, 2011; Meijerink *et al.*, 2016; McDermott *et al.*, 2015). The value-creation processes that stem from HRM are similar to RBV; HRM appears to meet RBV criteria for competitive advantage, where both can help in building organisational settings, operated by skilled, knowledgeable and experienced humans, that are difficult for competitors to copy or imitate: “skills and knowledge that are largely organisation specific and are therefore difficult to imitate” (Wood and Wall, 2005, p. 430).

Reflecting on existing research on HRM, it can be seen that the literature on HRM practices has evolved around what HRM is and associated schools of thought, then shifted to investigate HRM’s beneficial promises. The latter have received considerable attention among HRM scholars. Much of the existing research on HRM has considered its role in promoting organisational performance.

Developing new products and services is central to organisational performance and competitive advantage (Mumford, 2000; Li *et al.*, 2006). Practically, new products and services come from innovative work behaviour (IWB), which leads to internal innovations. In this respect, internal innovations are driven and introduced by employees within the organisation; therefore, this suggests some forms of close association between human resources and organisational innovativeness.

It can be clearly concluded from studies on innovation that the ability to innovate depends on the resources at the disposal of the organisation. Among these resources, human resources are primary (Mumford, 2000; Li *et al.*, 2006; Shipton *et al.*, 2006). Considering the HRM perspective, employees can be trained, motivated and rewarded and can acquire more knowledge, which can then develop their capacity to innovate. Employees' competencies to innovate can be developed through HRM practices that motivate them and allow for the risk-taking attitudes that are vital for innovation.

Seminal work on organisational performance, as indicated by the resource-based view (RBV) and Porter's (1985) SCA model, indicates that HRM practices are valuable for organisations where the marketplace is bounded by inevitable forces imposed by globalisation, skills gaps, employee and workforce shortages, and rapid changes in market needs, which have a significant impact on organisational ability to compete and survive.

Well-trained employees with skills and knowledge provide the business with the ability to compete nationally and internationally, leading to an increase in organisational growth, and, as a result, economic evolution and success (Ferguson and Reio, 2010). The aforementioned dynamics of today's industrial era, coupled with rapid advances in technology and knowledge sharing, make it indispensable for organisations to rearrange their resources, innovate and strengthen their capabilities for acquiring competitive advantage (Ferguson and Reio, 2010; Teece, 2007). Innovation is seen as a crucial pathway for organisations to compete, and even as a condition of survival, as discussed in Section 2.2.

The role of HRM practices can be to signify employees' skills, awareness, knowledge, ability, willingness, engagement and commitment to achieving

competitive advantage, and to enhance organisational performance and growth. This will facilitate the introduction and promotion of innovation within the organisation. As Paauwe and Boselie (2005) stated, “the search for the Holy Grail in HRM is the search for those best practices or best-fit practices that ultimately result in sustained competitive advantage for the organisation” (p. 72).

Overall, research has linked HRM practices with organisational performance as a positive outcome of an effective HRM system. It is proposed that employees are central to the HRM–performance link through the development of their skills, commitment, knowledge sharing, training and recruitment. A shortcoming of the studies on HRM to date is that on one level they tend to centre their efforts on the link between HRM and the status of employees and their well-being, and on another level the scope of their focus is organisational performance, downsizing, management collaboration and increasing productivity. These studies have failed, however, to reveal how employees can enhance organisational competitiveness, and more specifically innovation. This lack of studies and understanding can create difficulties for management and innovation practitioners in knowing what HRM practices to implement, and how to promote innovation, in an era widely characterised as innovation-oriented, in which to innovate is to survive.

Little work has been done in the area of HRM practices and innovation. Studies on the potential positive outcomes of HRM to enhance performance and innovation did not include a wide number of practices. Rather, they were limited to a subset of practices, largely traditional HRM practices (discussed further in Section 2.9.8). Considering other practices is likely to shed light on other platforms in which HRM practices can stimulate higher levels of innovativeness. The area of HRM–innovation is relatively recent in the research agenda. Nearly a decade only in the early 2000s the HRM–innovation relationship started to receive growing interest, yet that interest was still insufficient and restricted to certain practices.

This has informed this research, which considers the question of which HRM practices may influence innovation from the perspective of employees,

beyond the limited practices studied in existing research. A more detailed discussion in this regard of the rationale for this research is offered in Section 2.9.8.

2.8 DEFINING HRM

Over the last three decades, the area of HRM has received growing interest, presenting new and improved ways of enhancing organisational performance and productivity and managing human capital (Storey, 2007; Wright *et al.*, 2005). For Beer *et al.*, (1984, p. 1) HRM is “all management decisions that affect the relationship between organisations and employees – its humans”.

Session (1990, p. 1) confirmed Beer *et al.*'s (1984) view of HRM and deemed it “in the most general of senses to refer to the policies, procedures and processes involved in the management of people in work organizations”. Similarly, Boxall and Purcell (2000, p. 184) suggested that “HRM includes anything and everything associated with the management of employment relations in the firm”.

These definitions tend to be more direct and are limited to describing a general role of HRM by focusing on the aspect of managing the relationship between the workplace and employees. While Beer *et al.*, (1984), Session (1990) and Boxall and Purcell (2000) viewed HRM as management processes, policies and regulations that identify and manage the relationship between employees within the organisation and the organisation itself, Guest (1987) conceptualised it as an organisational activity with four key elements: flexibility, commitment, quality and integration. Flexibility refers to employees' ability to accept and adapt to changes that the organisation might experience in the context of a flexible structure. Commitment is related to employees being aware of organisational interests and gearing their efforts and skills towards achieving organisational goals. Quality refers to the quality of work performed by employees in order to enhance organisational performance and growth. Integration is about coupling both organisational needs and business strategy with human resource strategies and different aspects of HRM to become more constructive, consistent and supportive.

A broader definition of HRM was introduced by Storey (1995, p. 5): “a distinctive approach to employment management which seeks to achieve competitive advantage through the strategic deployment of a highly committed and capable workforce, using an integrated array of cultural, structural and personnel techniques”.

As distinct from Beer *et al.*, (1984), Guest (1987) and Session (1990), Storey (1995) broadened the view of HRM from a managerial into a more strategic role. HRM plays a vital role in harnessing organisational assets such as the workforce, organisational structure and culture in order to enhance organisational performance. Furthermore, HRM contributes to achieving competitive advantage by developing a pool of skills, knowledge, talents and experience that can help the organisation in exploring and exploiting opportunities and optimising the use of its resources and assets.

In terms of the approach adopted in this research, Storey’s (1995) definition represents the perspective that this research study holds on HRM. Storey’s definition highlights the role of internal capabilities such as structure and culture that can improve organisational performance in terms of achieving competitive advantage. Moreover, the definition recognises the need for organisational strategic deployment and arrangements for human resources and HRM as they contribute towards achieving competitive advantage.

2.9 SCHOOLS OF THOUGHT AND MODELS FOR HRM

The purpose of this section is to introduce the main schools of thought and models for HRM. The rationale behind these schools of thought and models is that they cover a variety of HRM practices and their potential impact on organisational performance and activities. Schools of thought on HRM introduce a number of HRM practices that might be beneficial for organisations, depending on their context, in terms of dealing with competition, enhancing performance and increasing productivity (Redman and Wilkinson, 2006). In addition, HRM models present the relationship between HRM practices and how they may affect each other and impact on organisational outcomes and performance (Redman and Wilkinson, 2006). There are two schools of thought in HRM research regarding the impact of

HR practices and policies on human capital and organisational performance: the 'best practice' and 'best fit' approaches (Redman and Wilkinson, 2006; Beardwell and Claydon, 2010).

2.9.1 Best Practice - HPWs

Widely recognised as high performance work systems (HPWs). HPWs consist of a number of practices that are intended to work interactively to recruit and develop employees and increase their levels of motivation and skill (Combs *et al.*, 2006). This suggests that the organisation needs to identify a set of HRM policies that can be applied in various circumstances and can positively impact on organisational performance (Beardwell and Claydon, 2010; Meuer, 2016). The best practice school believes that changing individual practices will have less impact than changing a number of practices together. In other words, combining a bundle of HRM practices to improve organisational performance and create value for employees and the organisation will have a greater impact on the business. This bundling of practices will lead to superior outcomes if the policy receives support from top management (Beardwell and Claydon, 2010; Krausert, 2015). These bundles have been variously labelled by HRM scholars as 'high-commitment management', 'HR system', 'high-involvement management', and 'high-performance work practices' (HPWs) (Redman and Wilkinson, 2006; Atkinson *et al.*, 2011).

Despite their various labels, these practices postulate similar narratives; in essence, they identify a distinctive set of HR practices that can be successfully applied in and are appropriate to all organisations. For instance, Pfeffer (1994; 1998) introduced a list in which he identified seven practices: extensive training, sharing information, selective hiring, employment security, self-managed teams, high compensation associated with organisational performance, and reduction of status differentials.

The interactions of different elements of the HPWs fall into a framework identified in the HRM studies as AMO: the ability, motivation and opportunity framework (Boxall and Purcell, 2003). AMO refers to the functional components of HRM systems, such as recruitment, training and appraisal. Ability refers to employees' capacity to perform effectively and can be

developed through practices such as training and recruitment. Motivation is regarded as developing employees' levels of commitment and involvement at work; motivation can be developed by practices such as rewards and compensation. Opportunity is about allowing employees to contribute openly and in a flexible manner at work; it can be promoted by practices such as communication and employee development (Boxall and Purcell, 2003). The AMO framework seems largely similar to and dependent on the PIRK model. The PIRK model was proposed by Lawler (1986) and consists of P (workplace power), I (information), R (rewards), and K (knowledge). The components of the PIRK model match the AMO framework conceptualisation, as HPWs seek to develop employees' willingness to take decisions (power and opportunity), and allow them to share information to facilitate decision-making processes (information, knowledge and ability), as well as rewarding them for demonstrating development and taking decisions (rewards and motivation). The AMO framework is efficient in identifying the broad essential components of HPWs, as acknowledged by Boxall and Purcell (2003). So AMO and HPWs are terms that relatively indicate the same logic of components of human resource systems (Lepak *et al.*, 2006).

Another widely recognised theoretical framework in the area of HRM and performance is the resource-based view (RBV). RBV, as stated earlier in this chapter, considers that resources that are unique, valuable, rare and inimitable are significant pools for competitive advantage and development of organisational performance (Barney, 1991; Boselie *et al.*, 2005). Given this, employees who are skilled, valuable and non-substitutable are a vital source of competitive advantage.

2.9.2 Best Fit

The best fit approach also known as contingency approach advocates that the adoption of HRM practices should be associated with the organisation's internal and external environments (Redman and Wilkinson, 2006; Beardwell and Claydon, 2010). It also suggests that there is no universal or shared practice that can be adopted by or is suitable for all organisations regardless of the environment, as stated by the best practice approach. The practices that 'best fit' the organisation depend on the context, strategy and structure

(inner context) and competitive strategy (outer context) of the organisation (Atkinson *et al.*, 2011; Redman and Wilkinson, 2006; Meuer, 2016).

Best fit tries to link HRM practices with competitive advantage and strategy. Moreover, organisations are recommended to adopt practices that fit with and are appropriate for employees along with the current status of the organisation. For example, a cost leadership strategy may impact on training programmes and attract unskilled and inexperienced employees. On the other hand, a differentiation strategy will imply the adoption of HRM practices that encourage knowledge sharing, risk-taking and employee skills. A competitive strategy focuses on innovation and may result in attracting skilled, knowledgeable and experienced employees and involve increased spending on training (Redman and Wilkinson, 2006; Beardwell and Claydon, 2010; Meuer, 2016). Central key variables that might affect an organisation's choice of specific HRM practices include the market strategy that the organisation follows and the size and structure of the organisation (Beardwell and Claydon, 2010).

In the same way, HRM models are used to study the relationship between HRM practices (as variables in the models) and how they will ultimately impact organisational performance. HRM models provide a progressive overview and logic of how HRM practices (most of them mentioned in best practice and best fit schools) interact with each other in order to enhance organisational outcomes and performance. In the light of this, a number of influential models for HRM practices have been proposed, such as the Harvard model (by Beer *et al.*, 1984), the Guest model (1997), the Storey model (1989; 1992), the Warwick model and the Bath People model, and these are presented in the following sections.

In summary, and considering the frameworks on HRM and organisational performance, it can be indicated that three theoretical frameworks are widely acknowledged in the literature on HRM: RBV theory, the HPWs (AMO/best practice) framework and the contingency approach (best fit). The following subsections will introduce the existing models for HRM.

2.9.3 Harvard Model

The Harvard model, proposed by Beer *et al.*, (1984) and also called “the map of HRM territory”, suggests four HRM policy areas: employee influence (which includes higher autonomy, power, authority and responsibility); human resource flow (which includes promotion, performance appraisal, selection and recruitment, termination, etc.); reward systems (which include motivation and pay incentives); and work systems (which contain work design and employees’ alignment).

The Harvard model states that in order to attain effective HRM practices and organisational performance outcomes, line managers should take more responsibility for combining HRM policies with competitive advantage. Personnel should also participate in drawing up policies that facilitate and develop their activities, making them more productive and engaged with the tasks they perform (Beardwell and Claydon, 2007).

Moreover, this model recognises that the organisation should consider the legitimate interest of stakeholders while adopting HRM practices; stakeholders’ interests must be reflected in HR strategy and the business strategy. Stakeholders are identified in this model as shareholders, governments, various employee groups and the community (Beer *et al.*, 1984). What distinct Harvard model from other models is that the acknowledgment of social perspective. This can be noticed by the recognition of various stakeholders internally and externally. Harvard model recognises the interaction and influence of stakeholders on HRM policies and practices.

2.9.4 Guest Model

Guest (1997) proposed a model for HRM composed of six dimensions: HRM strategy, HRM outcomes, HRM practices, performance outcomes, behaviour outcomes and financial outcomes. The model recognises that HRM is distinct from personnel management (PM) and is aligned with strategic management. Guest suggests that a set of integrated HRM practices will help the organisation to achieve superior organisational and individual performance (Guest, 1997).

Guest's model highlights those HRM strategies that are focused on innovation, quality, differentiation and cost reduction and can help organisations in adopting strategies and policies such as better training, selection, recruitment and job design, and high involvement and security, which will lead to higher levels of commitment, quality and flexibility (Guest, 1997). As a result, these practices will have an effect on performance, essentially achieving higher levels of productivity, stimulating innovation, increasing financial outcomes and reducing absenteeism (Guest, 1997). Unlike Harvard model, there was no wide recognition of social perspective in Guest model. Guest model focuses more on employees rather than other aspects of the organisation or stakeholders.

2.9.5 Storey Model

Storey (1989; 1992) suggested that HRM is a set of interrelated practices and policies. The model signifies the role of HR as the main source of production. It also asserts that successful organisations are distinctive due to employees' commitment and capabilities. This implies that organisations should assign more value to employees and give them more care and attention as their main assets and as a main source of competitive advantage (Storey, 1992). In addition, relationships and communication between line managers, subordinates and employees should be given high importance. The model signifies the role of line managers in people management. The distinctive view that Guest model offers is that the realisation of strategic integration of HRM practices and placing greater role of employee commitment in order to enhance performance.

2.9.6 Warwick Model

This model comprises five main interrelated elements. It recognises and analyses the effect of external context (socio-economic, political-legal and competition) on internal operations (Hendry and Pettigrew, 1990). According to the Warwick model, higher levels of performance can be achieved through the alignment of external and internal contexts by including various contexts in which HRM operates and by emphasising that HRM performs a strategic function through a wide range of skills and tasks (Hendry and Pettigrew, 1990). Warwick model differs from Harvard and Guest models by recognising

the context where HRM practices are operating and applied. Moreover, Warwick model proposes the recognition of external elements impact upon the internal activities and operations of the organisation.

2.9.7 Bath People Model

This model explores the 'black box problem', which refers to the link between people and performance. The model recognises that employees will be better able to contribute to enhancing organisational performance if specific HRM practices are operationalised and implemented (Purcell *et al.*, 2003). The crux of the model is that HRM practices will have greater impact on employees and organisational performance if they contribute to ability, motivation and opportunity. Employees' ability can be sustained if they are allowed to develop their skills, knowledge and information sharing. Motivation refers to incentives and rewards that can influence and inspire employees' performance and willingness to participate more effectively while performing tasks (Redman and Wilkinson, 2006). Opportunity is regarded in this model by allowing employees to participate more in drawing up policies and increasing organisational engagement and commitment. Additionally, line managers and front-line management have to continuously control, lead on and implement HRM strategies that invest in employees and their skills, abilities, willingness, motivation and commitment. The Bath People model identified 18 HRM practices and showed the relationship between them and how they can contribute to organisational outcomes and performance (Purcell *et al.*, 2003). Bath people model refers to the role of employees as central key to achieve higher levels of performance. In the light of this, the model also called people performance model which focuses on a number of pillars that conceptualise that the need to focus on rewards, training, working environment and payments incentives.

These models failed to recognise how the HRM practices can interact in order to achieve better organisational performance. The models also emphasise the interaction between HRM practices. Moreover, these models failed to identify which HRM practices are suggested to be applied and operated by the organisations, rather they seem to propose general suggestions and recommendations to organisations and management teams

on the need to focus on employees, internal factors, or external context that surrounds the organisation.

2.9.8 The Implications of HRM Models for the Present Research Study

The relevance to the present research of the work discussed above is that existing studies on HRM practices and organisational performance have focused on and limited themselves to a subset of HRM practices. No study has been found that examined the role of the complete range of HRM practices as a whole (a considerably larger number of HRM practices) in promoting organisational performance and innovation: “There is much commonality as studies typically cover a sophisticated selection, appraisal, training, teamwork, communication, job design, empowerment, participation, performance-related pay, promotion, harmonization and employment security” (Wood and Wall, 2005, p. 435).

The HRM models described above examine the relationship between a number of variables (HRM practices), how they are correlated with each other and their effect on organisational outcomes and performance. However, what these models failed to offer are employees’ perceptions of HRM practices. In addition, they remain at the inter-organizational level (macro level), addressing HR policy and organizational strategy for enhanced performance. These models will not be extended in this study; instead, the present research examines the relationship between HRM practices and innovation. More specifically, it studies the effect of HRM practices on innovation, rather than the relationship between these practices or variables and then how they affect organisational performance or innovation.

The dynamic environment that dominates the markets outside in the form of intense competition has not been recognized by the models of HRM. Similarly, shortened product life cycles fuelled by rapid changes in customers’ demands seem not to be addressed in the existing models of HRM. For instance, the Harvard model identifies HR outcomes such as individuals’ well-being and commitment, while the Guest model indicates that HRM outcomes need to be linked with flexibility and enhanced performance in the form of financial gain.

Moreover, HRM models have failed to specify possible bundles of practices that are capable of stimulating efforts to tackle intense competition and changeable customer demands; instead, models of HRM appear to be generic and focus on performance without a clear set of practices that target different aspects of performance such as innovation. Likewise, HRM theorization and mainstream studies appear to have focused on performance development themes in practices – mainly financial performance and customer satisfaction (Subramony, 2009).

The above-mentioned characteristics of the markets and customers call for competitive advantage to be sustained through the introduction of innovation (Damanpour, 2009; Trott, 2008) in various forms, such as products, services and processes. Recent efforts to develop organizational performance have revealed the HR–innovation link to be a source of competitiveness and success in organizations.

Best-fit, best-practices and other approaches researchers have labelled share elements with the ability, motivation and opportunity (AMO) model and the knowledge, skills and abilities (KSA) model, which are crucial for supporting employees to face hurdles and tasks at work. Yet the majority of studies have been focused on the performance link from a financial rewards perspective, in essence asserting that performance is considered to be enhanced when financial revenues are in growth as well as market shares show similar behaviour (Subramony, 2009).

In the light of this, performance outcomes have not been addressed in terms of innovation or new products or services. On the contrary, recognition of performance in terms of financial measures, such as higher levels of profit, or sales of products and services dominates the research on the HRM–performance link (Mathieu *et al.*, 2006; Ahearne, Mathieu, and Rapp, 2005).

A more comprehensive conceptualization of the HRM–performance link is needed to better understand the impact that HRM systems can have on organizations (Shipton *et al.*, 2006), which falls under the aims of this study as mentioned earlier. Attempts to shed light on the HRM–innovation management link can identify a set of bundles of HRM practices that are

beneficial for the organization and develop performance from perspectives other than just financial ones. Such efforts demand effective exploitation of resources, mainly human resources as they are the primary source of ideas, decision-making and it is they who make use of existing assets and are responsible for the implementation of various strategies (Boxall and Purcell, 2011).

A critical element of existing studies on HRM and performance is that the majority of studies are cross-sectional, which may hinder understanding of the real impact of HRM practices, especially when changes are introduced in the HR system, the structure of the organization or even the marketplace (Pil and MacDuffie, 1996). There is a lack of longitudinal studies, which could offer a better explanation of the HRM–performance relationship. Longitudinal studies can show changes in HRM systems over time and as a result offer a more holistic picture of the effectiveness of some HRM practices.

However, cross-sectional studies addressing the HRM–innovation link are still limited (Seeck and Dieh, 2016; Shipton *et al.*, 2017). Findings from existing studies on the relationship between HRM practices and innovation identify similar practices that promote innovation. This is confirmed by a number of studies (see, for example, Shipton *et al.*, 2006; 2017; Scarbrough, 2003; Jiang *et al.*, 2012) whose findings show similarities in the impact of HRM practices on innovation over the period of a decade (since 2003) when the first HRM–innovation study was conducted (Seeck and Diehl, 2016).

What is missing in the current literature on HRM and innovation management, with regard to studying the impact of HRM practices on innovation, is consideration of a wider range of HRM practices, types of innovation and employees' perceptions.

Additionally, strategic literature on HRM management offers conclusions in the form of investing more in training, recruitment resources, performance appraisal, reward systems and appropriate payment incentives. There is a lack of advice on which bundles of HRM practices organizations should adopt or employees can benefit from. It is within the scope of this study to identify a bundle of practices that are vital for innovation. The level of analysis offered

by HRM theorization is limited within industries, companies and business units. It is rarely addressed and initiated across employees, and when it is, financial measures are the criteria by which performance is assessed. There is a gap between intended HRM practices that are designed by the management and the actual outcomes of these practices. Underpinning this variation are employees' perceptions of HRM practices (Wright and Nishi, 2004), which need to be further addressed.

This research does not seek to address the interrelation of the variables proposed by different HRM models or how they may impact on each other but rather to extend existing studies and explore which HRM practices potentially affect innovation. Therefore, this study considers a comprehensive list of HRM practices; the above HRM models contain a number of HRM practices that are studied in this research, in addition to a number from Armstrong's (2011) *Handbook for Human Resource Management*, which provides a seemingly comprehensive list of HRM practices and their role.

Departing from HRM models and previous studies on HRM and organisational performance and innovation, this research looks at HRM practices and innovation in an attempt to study employees' perceptions of which HRM practices affect innovation.

2.10 RESEARCH ON HRM PRACTICES AND INNOVATION

This section looks at the relationship between HRM practices and product innovation. It shows how the introduction of product innovation is influenced and affected by HRM practices. The terms 'HR' and 'HRM practices' have been used interchangeably in studies exploring product innovation and human resource management; in this study, the term 'HRM practices' is used.

While the fields of HRM practices and product innovation originated from a different focus and scope in the literature of business and management, there is recognition in the literature proposes that there is a connection between HRM practices and innovation. It is important to consider the shift that occurred in these two organisational activities to better understand the starting point of this research into HRM practices and innovation.

The section is structured as follows: first, it highlights links between human resources and HRM practices as a vital tool to sustain competitive advantage, since competitive advantage is the main purpose of innovation. Figure 2.2 summarises a number of studies on HRM practices and innovation as well as presents the practices that they have studied. A number of HRM practices supported by studies and previous research are then presented, as shown in Figure 2.2. This shows which practices are more relevant to product innovation as well as which practices have a less clear role in the literature in promoting innovation. These practices are then explained. A number of HRM practices that have not been studied in the literature are presented.

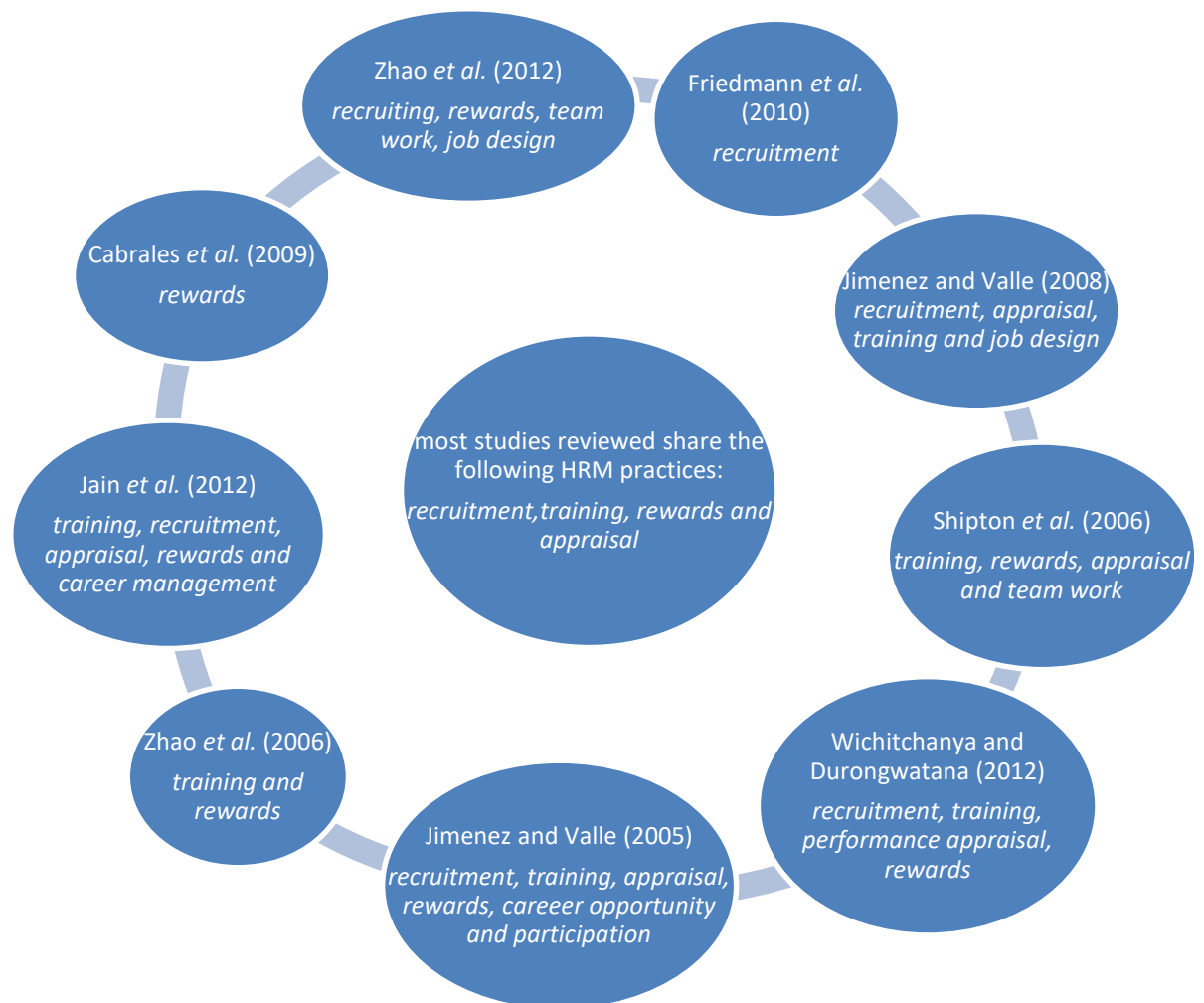


Figure 2.2: Studies on HRM practices and product innovation.

As discussed above in Sections 2.9 and 2.10, human capital is a key resource for organisations (Teece, 2007; Barney, 1991). The functioning of human capital resources depends hugely on employees' capabilities and

motivation as well as on an efficient HRM system (Li *et al.*, 2006). Thus, innovation and HRM practices are both central to gaining the competitive advantage that organisations seek to achieve. Studies on HRM practices and innovation show that innovation can be promoted through HRM practices. As HRM practices help in developing one of the essential resources that organisations have, human capital, in order to achieve competitive advantage (Shipton *et al.*, 2006), studies on innovation and HRM practices have linked these activities (HRM practices and innovation) in order to explore and study how HRM practices can promote innovation, so organisations can achieve competitive advantage. Innovation advocates have claimed that it can be sustained and developed from different resources. Among these resources, the most influential, powerful and effective lie in employees' minds, skills, experience and knowledge (Bessant *et al.*, 2005): "Internal innovation mainly comes from the employee with capability" (Li *et al.*, 2006, p. 681). As defined by Esen *et al.*, (2013), human capital is "the pool of employee talent, skills and abilities that brings economic value to organisations" (Esen *et al.*, 2013, p. 787). The unique value of HR stems from it being difficult to copy employees' knowledge, experience, abilities and behaviours. All these characteristics are affected and developed through a system of HRM practices (Scarborough, 2003).

HRM practices develop and create value for the intangible assets that employees have, such as experience (Zanko *et al.*, 2008). The literature on HRM and product innovation shows that HRM practices can promote product innovation in organisations in various ways. Among these, scholars have identified knowledge sharing, creation, learning process, teamwork, networks and trust. HRM practices help in creating and supporting the best conditions for employees to work and also help employees to adopt new procedures and adapt to changes (Laursen, 2002; Zhao *et al.*, 2012).

Much of the attention in the HRM literature has been given to the value of HRM's role in enhancing and developing organisational performance (Shipton *et al.*, 2005). Less attention has been given to how HRM practices can promote innovation (Shipton *et al.*, 2005; 2006; Esen *et al.*, 2013). As stated by Zhao and colleagues, "our knowledge about the extent to which

HRM promotes employee creativity and organisational innovation is still relatively scarce” (Zhao *et al.*, 2012, p. 4026).

Existing studies on HRM practices and innovation are limited and focused on a subset of HRM practices. Nevertheless, the HRM literature identifies many more practices that could impact on innovation, which falls within the core aim of this research study, which is to review the likely impact of other HRM practices on innovation; these are discussed in detail in Section 2.9.

Previous research on HRM has described the role of human capital as a valuable source of competitiveness (Teece, 2007; Barney, 1991). Human resources that are rare, skilled and inimitable provide competitive capability for the organisation (Barney, 1991; Bornay-Barrachina *et al.*, 2012). Thus, HRM can equip human resources with skills, abilities and expertise. Traditional research on HRM is characterised as following a systematic approach to identify HRM practices – mainly a bundle of practices borrowed from high-performance work practices (HPWs) that may impact on organisational performance (Huselid, 1995; Boselie *et al.*, 2005). Recent calls in the literature suggest the need to consider different HRM systems to develop various organisational capabilities such as creativity and knowledge sharing (Becker and Huselid, 2006). Research on HRM has studied the impact of HRM practices on customer service (Liao *et al.*, 2009; Bowen, 2016), product efficiency and quality (Gibson *et al.*, 2007), and knowledge acquisition and sharing (Cabrales *et al.*, 2009). These outcomes were viewed as intermediate outcomes of HRM. Another widely recognised stream of studies on HRM has focused on the impact of HRM practices on employees in developing their organisational capabilities. Two key principles in the scope of these studies were identified: one school of thought emphasised the importance of HRM practices to the development of employees’ abilities, motivation and opportunities (AMO model) (Delery and Shaw, 2001), and the second school of thought highlighted the role of HRM practices in developing employees’ knowledge, skills and abilities (KSA model) (Lepak *et al.*, 2006).

There is a remarkable consistency of research, mainly focused on the relationship between employees’ and performance, with little consideration

and attention devoted to how management can configure, manage and use its resources more efficiently. Therefore, a greater role for HRM practices could stem from its potential ability to clarify and explain the processes of managerial activities that allow employees to maintain valuable and rare characteristics and develop their existing strands such as skills and abilities so they can contribute more effectively to sustaining competitive advantage (Cabrales *et al.*, 2009; Bornay-Barrachina *et al.*, 2012). According to Cabrales *et al.*, (2009) “HRM can a) increase the value and uniqueness of the knowledge through internal development and b) influence employees’ behaviour in the desired direction – in this case, to improve firm innovation” (p. 488).

It is widely acknowledged that innovation is indisputably important to the development of organisational performance as well as organisational competitiveness (Damanpour, 2009; Trott, 2012; Rodriguez *et al.*, 2014; Singh *et al.*, 2016). Individuals are perceived as the lifeblood of organisational activities and that obtaining required skills and abilities to perform tasks is essential for the organisation to develop innovation. Moreover, managerial efforts that are mainly crystallised by HRM enable individuals within the organisation to be more capable of introducing innovation.

From an HRM standpoint, research at both the macro and organisational behavioural levels has demonstrated extensive and considerable efforts to understand human capital as a critical asset of the organisation that supports innovation (Wright *et al.*, 1994; Lado and Wilson, 1994).

The traditional literature on innovation has asserted the role of individuals and their attributes such as skills, knowledge, motivation and commitment to enabling innovation, in addition to contextual factors that are firm-specific, such as teamwork and rewards (Zhou *et al.*, 2013; Shipton *et al.*, 2006).

Based on the above the origins of HRM and innovation, HRM can be configured to promote attributes and behaviours that are beneficial and contribute to innovation. The literature on HRM and innovation lacks study and identification of HRM practices that promote innovation. There is little

research on HRM and innovation as most of the studies on HRM studied the impact of HRM practices on performance and employees' capabilities. Regarding innovation, most of the studies have focused on R&D expenditure, technology development, knowledge spill over and market competition (Cabrales *et al.*, 2009; Christensen, 1997; Sambrook *et al.*, 2011).

Different HRM practices can reflect and develop several potentials to enhance innovation capacity. For example, recruitment can facilitate 'human capital advantage' through recruiting talented employees to the organisation who might be a vital source of ideas and creativity (Boxall, 1996). However, human capital advantages are subject to reduction over time, especially with tough competition and rapid changes in customer needs (Purcell, 1996). Thus, organisations are required to establish and define suitable HRM practices for developing employees' capabilities and manage their activities to better use organisational assets and capabilities (Purcell, 1996; Cabrales *et al.*, 2009).

Although scholars have widely agreed on the importance of HR for innovation (Shipton *et al.*, 2006; Zhao *et al.*, 2012), until recently, efforts to consider the relationship between HRM practices and innovation were described as minimal and as failing to provide sufficient explanation for the role of HRM practices in stimulating innovation: "the synergy between HRM practices and innovation has received little attention until recently" (Zhou *et al.*, 2013, p. 264). Literature on HRM and innovation started to emerge when scholars begins to shed some light on 'innovation HRM systems' (Jimenez and Valle, 2008; Shipton *et al.*, 2006; Larsson and Foss, 2003). To be more specific, there is a complete lack of research on employees' perceptions of the role of HRM practices in promoting innovation in organisations and its influence on whether organisations are perceived. Despite the calls in the HRM and innovation research for more studies to address the many questions on HRM and innovation interactions that are still unanswered, the HRM and innovation research remains largely unfarmed and unexplored (Aagaard, 2017).

Evidence exists in the literature for the impact of specific HRM practices (recruitment, training performance appraisal, and job design) on innovation.

An innovation capability that is seen as a proxy for competitive advantage is dependent on HRM practices as they can potentially increase organisational and employees' capabilities (Cabrales *et al.*, 2009).

The mainstream of existing studies that have looked at the HRM–innovation box are characterised by three main elements. The first element is that initial efforts in understanding the relationship between HRM and innovation have largely tended to borrow a limited number of HRM practices, specifically HPWs, as predictors of the impact of this set of practices on innovation. These practices are recruitment, training, performance appraisal and job design (Zhou *et al.*, 2013; Zhao *et al.*, 2012; Shipton *et al.*, 2006). However, limited effort has been directed towards understanding the role of other specific HRM practices in promoting innovation. The second element is that the majority of these studies have looked at the role of HRM practices in promoting innovation through their impact on mediating factors such as creativity, skills, abilities and knowledge (see, for example Cabrales *et al.*, 2009; Lepak *et al.*, 2006). However, there has been very limited research on the direct impact of HRM practices on individuals within the organisation, or, in other words, employees' perceptions of the role of HRM practices in promoting innovation. The direct link between HRM and innovation indicates employees' perceptions of HRM practices to promote innovation. This is in line with the proposition offered by Paauwe and Richardson (1997), who stated that HRM activities that entail practices such as recruitment and training lead to enhanced performance. Additionally, the direct link is what Paauwe and Richardson called reverse causality (1997): in essence, to achieve higher performance such as increased quality of products or market value, employees need a set of practices.

The third element is that most of the studies have an inter-organisational (macro-level) level focus in various industries such as technology, manufacturing and information technology. Nevertheless, very little work has been devoted at the intra-organisational level (micro level).

Observations and outcomes from existing research on HRM and innovation suggest a critical point for the research in HRM and innovation – that is, there

is a need for a more holistic and collective approach to understanding the potential impact of HRM practice on innovation. Furthermore, a holistic and collective approach refers to a wider consideration of the elements of the relationship between HRM and innovation. This includes seeking to study the impact of other practices that previous research has not looked at and that are likely to impact on innovation, based on their expected outcome and design. Also, the study of different types of innovation, product, process or service, in the link between HRM and innovation relationship. The level of novelty and innovativeness is encouraged to be looked as different HRM practices can impose various impacts depending on the type of innovation. The direct link between HRM and innovation is considered in this study; that is, this study does not intend to explain why specific practices are beneficial for innovation or identify the mechanisms behind some practices being more highly prioritized by employees. Rather, the study intends to look at what practices employees perceive as crucial for innovation, and what practices employees perceive that they require in order to sustain innovation.

Research on the HRM–innovation link is still in its early stages, and more efforts are required in the area of HRM and innovation to study the impact of bundles of HRM practices on innovation at different contexts, for example at the intra-organizational level and type of innovation which falls within the aims of this study (Seeck and Diehl, 2016; Shipton *et al.*, 2017).

To achieve the desired performance levels in terms of quality of products and services, employees will identify what practices support their efforts to do so. It is not within the scope of this research to explain why certain practices can fertilize innovation; hence, the direct link is indicated here. Additionally, the mediating role of creativity and other factors is not within the scope of this study.

Finally, as employees are the foundation of all innovations, the study of the intra-organisational level of the HRM–innovation is worth considering. The differences or gaps between intended HRM practices as designed by management and HRM practices as perceived by employees need to be

considered; therefore, perceptions of HRM practices to promote innovation calls for attention.

It seems that the potential of individual HRM practices to support innovation is difficult to distinguish, as HRM practices found to have an impact on innovation can influence each other (see Shipton *et al.*, 2006; Zhao *et al.*, 2012; Aagaard, 2017). Additionally, as employees are the source of ideas and creativity, devoting time to problem solving, use of technology and knowledge sharing to introduce innovations, this places a central importance on employees and describes innovation as 'employee-driven' in the first place as opposed to it being driven by competitors and technology. Therefore, effective monitoring and development of HRM to enable employees to become more involved in and aware of innovation seems to be crucial; thus, HRM is expected to play an effective role in this regard. Two flows intersect in the introduction of innovation: the flow of employees, and the flow of knowledge and resources (Scarbrough, 2003); accordingly, HRM practices can greatly shape and align such flows. This brings into play the consideration of a wider range of HRM practices that previous studies failed to consider in the intersection of the above flows to promote innovation. Now, as employees' perceptions and understanding of HRM practices (Nishii, 2008), their perceptions of other practices that were not studied previously might lead to identification of other HRM practices that could influence innovation, which begs the need for this research. It does appear that even recent research that has called for more studies on HRM and innovation and has considered employees' perceptions of the role of HRM practices in promoting innovation has focused on the same practices that previous studies looked at (see Aagaard, 2017).

Employees' perceptions of the role of HRM practices in promoting innovation awareness and commitment are worth studying as this broadens our understanding of the mechanisms of HRM–innovation relationship and provides suggestions of the forms and directions of the relationship between HRM and innovation so management and innovation practitioners can effectively implement HRM practices and innovation and as a result gain

more profit and market leadership and, most importantly, on a wider, macro-level develop the economy cycle.

It is not enough to uncover which practices promote innovation or the existence of some of these practices; it is fundamental to seek to understand how the bundles of practices are perceived to influence innovation awareness and commitment, as proposed by Nishii (2008, p. 528), who stated that “it is not just the HR practices themselves, but rather also employees' perceptions of those HR practices that are important for achieving desired organisational outcomes)”.

Thus, in the light of the preceding findings and arguments, this research attempts to fill the gaps addressed above by considering a larger number of HRM practices that may potentially impact on innovation in the following sections (2.10.1–2.11). The practices considered in this research are not restricted to the practices considered in previous research, and the research does not intend to repeat the same practices (training, recruitment, performance appraisal and job design). Rather, the practices this study considers are overarching in the HRM schools of thought and models. More specifically, the research looks at employees' perceptions of HRM practices that may potentially influence innovation. The study considers this link without examining mediating factors such as creativity and knowledge, as the study of employees' perceptions of the role of HRM practices in promoting innovation is linked more with understanding the mechanism that underpins this relationship; therefore, this research focuses solely on employees' perceptions of the role of HRM practices in promoting innovation. Thus, studies of the mediating role of knowledge, creativity and other factors are less likely to help in understanding employees' perceptions of HRM practices. Therefore, the distinct contribution that this research seeks to make is study of the relationship between HRM practices and innovation at the intra-organisational level. To this end, a broader number of HRM practices gathered from several existing HRM models, as well as from the *Handbook for Human Resource Management* by Armstrong (2011), are studied in this research.

2.10.1 Recruitment and Selection

Mumford (2000) argued that HRM practices relate to innovation in two respects: selecting employees and motivating them to develop ideas; and supporting employees in implementing their new ideas. Recruitment of employees plays a role in developing organisational resources and sustaining competitive advantage (Puck and Friedmann, 2000). According to Puck and Friedmann (2000), employees need to be chosen and recruited in order to fit and support organisational goals. In addition, choice of employees should be based on acquiring individuals with knowledge. Zhao *et al.* (2012) added that hiring and selection help to stimulate innovation by acquiring the creativity of new employees; creativity is a form of human capital, and organisations need to be careful when selecting employees to acquire it. Recruiting knowledgeable employees plays a crucial role in supporting innovation. There is wide agreement in the literature about the positive role that selection can play in the innovation process. It is considered as a primary tool in building knowledge in the organisation, which can support the innovation process: "Recruitment and selection, for example, have an impact on the process of knowledge creation between recruiters and selection interviewers decide on the knowledge that is brought into the organisation" (Sels and Winne, 2010, p. 1868).

For example, recruitment and selection are found to have a positive impact on innovation. These two practices have been investigated by several authors (Friedmann *et al.*, 2010; Zhao *et al.*, 2012; Jimenez and Valle, 2005; Jain *et al.*, 2012; Wichitchanya and Durongwatana, 2012). In a study of 80 European international firms in India, Friedmann *et al.*, (2010) studied the role of HRM practices in improving work quality and the development of new products. They found that HRM practices have a positive effect on the value and quality as well as the rareness of human resources. In addition, Friedmann *et al.*, (2010) stated that recruitment and selection are essential in acquiring and promoting competitive advantage through the selection of employees who believe in the importance of innovation. Recruitment and selection of employees helps in developing and creating an environment within the organisation that stimulates creativity and innovation. Recently,

Zhao *et al.*, (2012) stated that HRM practices can promote and support creativity through employees. Zhao *et al.*, (2012) added that recruitment and selection of employees can create a space for innovation if creativity is considered when searching for employees. Similarly, Jimenez and Valle (2005) stated that in order to achieve innovation, organisations need to adapt recruitment systems to attract knowledgeable employees. The recruitment of employees with knowledge and skills in order to promote innovation is referred to as 'people retention' by Wichitchanya and Durongwatana (2012).

2.10.2 Rewards and Incentives

The second HRM practice is rewards and incentives. Rewards are found to have a positive impact on innovation. Zhao *et al.*, (2006) stated that rewards and incentives play an important role in promoting the ability and capacity to develop innovations; their study of 194 high-tech Chinese firms in eight regions found a positive impact of incentives and rewards on promotion of innovation. Zhao *et al.* (2006) added that people's behaviour can largely be explained in terms of two dominant interests: "economic growth and social acceptance" (Liet *et al.*, 2006, p. 682). So, incentives and motivations can be material (economic) or non-material (social acceptance). In their study, Zhao *et al.* (2006) found that non-material incentives can positively affect product innovation, while they found there is a negative relationship between material incentives and product innovation. This finding implies that self-dependence and growth are more efficient and vital for employees in order to develop product innovation. Zhao *et al.*, (2012) conducted a new study of 106 Chinese firms in which they examined the role of HRM practices in supporting product innovation. They found that HRM practices, through creativity, can create value for innovation. Zhao *et al.*, (2012) found that reward systems are positively related to product innovation, mediated through creativity. Their two studies differ, in that in the more recent one Zhao and colleagues examined the role of reward and its effect on innovation through the mediating factor of creativity, while in their 2006 study they examined the direct effect of HRM practices on innovation, with no mediating role from other activities such as creativity. This confirms the finding of the 2006 study that innovation can be affected by HRM practices, as well as

giving a strong evidence for the impact of HRM practices on innovation, since the impact on innovation has been studied from different perspectives: the direct impact of HRM practices on innovation, and HRM practices' impact on creativity to promote innovation.

In supporting Zhao *et al.*'s (2006; 2012) findings, Cabrales *et al.*, (2009) acknowledged that HRM practices can add value to innovation if employees' knowledge is taken into account. HRM practices should consider employees' knowledge and deliberate practices that promote knowledge and knowledge sharing. In a study of 86 Spanish firms in telecommunications, TV, machine manufacturing and the chemical industry, Cabrales *et al.* (2009) found that HR practices should be knowledge based in order to support innovation; compensation, rewards and incentive systems should be introduced and applied when employees generate solutions and ideas to solve problems and introduce innovation, in order to encourage them to promote knowledge. Cabrales *et al.* (2009) also stressed that HRM practices can be facilitators of knowledge, which in turn has a positive effect on innovation. The study fails to focus on the role of other HRM practices in innovation; for example, the effect of teamwork on knowledge sharing and supporting innovation is not mentioned. Moreover, their research is focused on R&D departments, which may impede consideration of other HRM practices in innovation, as the R&D role is itself part of the innovation process. The work done by Cabrales *et al.*, (2009) and Zhao *et al.*, (2012) is consistent with and confirms what Shipton *et al.*, (2006) stated in relation to rewards, although only Shipton *et al.*, claimed that rewards can have a positive impact on product innovation through exploratory learning. In other words, rewards should be introduced if exploratory learning takes place among employees, so that they will be more motivated to introduce creative ideas and innovation (Shipton *et al.*, 2006).

Rewards can be used to motivate and encourage employees to perform tasks in a more efficient way. Moreover, they are designed to support and encourage employees to introduce creative ideas. Rewards have a threefold positive impact: attracting creative and knowledgeable employees; motivating employees to make more effort; and allowing them to pursue their own ideas in support of internal innovation (Shipton *et al.*, 2006). Rewards can improve

and modify the way that employees perform tasks (Cavagnoli, 2011). Furthermore, they give recognition to employees, which helps in self- and continuous development and motivates them to work harder to fulfil the required tasks and responsibilities (Armstrong, 2011). As a result, this recognition and motivation creates a space for innovation.

2.10.3 Training and Development

The third HRM practice that has been widely discussed in the HRM and innovation literature is training. Jimenez and Valle (2005; 2008) studied the role of HRM practices and how innovation is affected and promoted by these practices. In a study of 180 Spanish manufacturing firms, Jimenez and Valle (2005) found that training, development and other HRM practices such as internal career opportunities, performance appraisal, compensation and employee participation are positively related to innovation and can foster it. Furthermore, the study revealed the complexity of the relationship between HRM practices and innovation. The authors produced empirical evidence that innovation can explain the introduction of some HRM practices such as training and recruitment. Moreover, they showed that innovation and HRM practices have to be aligned in order to introduce successful innovations. This offers clarification of the interaction between HRM practices and innovation. Following Jimenez and Valle's (2005) work, Shipton *et al.*, (2006) studied the role of HRM practices on innovation, conducting interviews with CEOs, HR managers and production managers in 22 British firms using a survey questionnaire. They found that innovation can be stimulated by HRM practices that support exploratory learning and exploit existing knowledge. They stated that training has a significant impact on innovation through exploratory learning. In a more recent study of 173 Spanish firms, Jimenez and Valle (2008) found that training, job design, staffing, appraisals and organisational design can foster innovation. The central assumption here is that the capacity and ability to innovate is found in employees, who are the source of new ideas and concepts, and they have the knowledge, skills, abilities and experience to promote innovation. The work of Jimenez and Valle in 2005 and 2008 differs in how HRM practices and innovation were perceived and studied. In 2005 they viewed HRM practices as an antecedent

and prerequisite for innovation; at the same time, introducing innovation requires organisations to adopt HRM practices to facilitate the innovation process. In 2008, in their empirical work, Jimenez and Valle threw light on the role of employees, viewing innovation as the result of employees' efforts and activities and implying that organisations have to consider and develop their knowledge, skills and experience.

There is wide agreement in the literature that training has a positive impact on production innovation, providing employees with the ability to build and use new skills (Liet *et al.*, 2006). Employees are required to attain new knowledge and skills and keep up to date with new knowledge, as innovation requires knowledge and tactics. Moreover, innovation requires different processes and requirements; thus, through training employees can gain new knowledge and enhance their ability to innovate (Liet *et al.*, 2006).

Training is needed in order to improve employees' awareness of their responsibilities and tasks. It also increases efficiency of knowledge use as well as lowering the risk of knowledge loss (Olander *et al.*, 2011). Training accompanied by complexity can play a role in introducing innovative products. Performing complex tasks without training can be a barrier to innovation (Cavagnoli, 2011). HRM and innovation seem to interact in a two-way modelling practice. This is shown by Jimenez and Valle (2005), who stated that when organisations adopt innovation strategy they also need to adapt HRM practices to support innovation. Training plays a significant role in creating space for innovation by providing the opportunity for employees to explore knowledge, the latest technology and advances in the marketplace (Shipton *et al.*, 2006).

2.10.4 Performance Appraisal

The role of appraisals in promoting innovation is less clear than that of other HRM practices. This does not mean that it is vague or complex, but that the role of performance appraisal is not widely agreed on in the literature on HRM practices and innovation, with some scholars claiming that performance appraisal has a positive impact on innovation (Zhao *et al.*, 2012; Jain *et al.*, 2012) and others scholars claiming that it has a negative one (Byron *et al.*,

2010). Jain *et al.*, (2012) conducted a qualitative study to examine the role of HRM practices on product innovation. Using interviews with three companies in India and an online survey with 66 Indian HRM managers, they found that HRM practices promote innovation. Jain *et al.*, (2012) identified that performance appraisal and other HRM practices such as rewards and career management are positively related to promoting innovation. In the same year, Wichitchanya and Durongwatana (2012) conducted a literature review and showed that performance appraisal and compensation are at the core of HRM practices and can promote innovation. The study is built on reviewing the literature that deals with HRM practices and innovation. Moreover, Wichitchanya and Durongwatana (2012) categorised performance appraisal as an HRM practice focused on people development. In contrast with these findings, Zhao *et al.*, (2012), in their study of 106 Chinese firms, found that performance appraisal was not positively related to innovation. The negative impact of appraisal on innovation was explained by Byron *et al.*, (2010): during performance appraisal, employees might feel stressed and lose concentration on their tasks and work.

Appraisals are about assessing and evaluating employees' performance, measuring actual performance and comparing it with targets and goals designed to achieve organisational strategy and objectives. The literature on HRM practices related to appraisal and innovation is less clear, and there is no wide agreement. Some researchers have stated that performance appraisal is a good practice that stimulates innovation, while others such as Byron *et al.*, (2010) believe that appraisals have a negative impact on innovation development. They added that employees might feel stressed and lose concentration on their work as well as feeling uncomfortable while appraisals are performed. Appraisal might affect employees' long-term perception of how they can improve their performance, how they are considered and how their work is evaluated (Byron *et al.*, 2010). In addition, feedback from annual appraisals is likely to be misunderstood by employees and mishandled by managers, because in employees' minds performance appraisal is linked with career development and prospects, resulting in anxiety. On the other hand, some researchers have claimed that appraisals

have a positive effect on innovation (Wichitchanya and Durongwatana, 2012; Jimenez and Valle, 2005), stating that performance appraisal is important to ensure that employees know what the organisation is expecting from them and what they should achieve. Appraisal provides recognition and guidance (Armstrong, 2011). It also helps in continuous development of employees, and it can help managers and employees fill in the missing gaps in their performance. In other words, appraisals help in identifying and recognising the gaps between targets and actual performance. Moreover, appraisals increase productivity, motivation and the quality of developed products (Dawson *et al.*, 2006). Appraisals also help to increase productivity and motivation for employees by providing feedback and guidance on current activities and aligning them with the organisation.

Wood and Wall (2005) reviewed existing literature, published from 1994 onwards, on HRM practices and aspects of organisational performance such as productivity and profit, at a time when research into HRM practices and organisational performance was gaining prominence. Furthermore, Wood and Wall (2005) included studies that covered multiple HRM practices since they were attempting to investigate whether HRM systems as a whole affect organisational performance. They found that most publications focused on a limited number of HRM practices and did not include a wider focus on whole systems or policies.

Wright *et al.*, (2005) reviewed 66 studies on HRM and organisational performance and found that the problem is the design of the studies, their methodology and the mediating variables, which are problematic and lead to unclear and contrary results. Among these 66 studies, at least one found a positive link between HRM practices and performance where the design was not “predictive” (measuring and testing HRM practices before the performance period). Most studies followed one of the following designs: “post-predictive”, where they measured HRM practices after the performance period; “retrospective”, where participants were asked about HRM practices that existed prior to the performance period; and “contemporaneous”, measuring HRM practices simultaneously with performance.

Supporting Wood and Wall's conclusion, Wright *et al.*, (2005) conducted a study in 45 business units of a large food service company operating in the USA and Canada to measure how HRM practices correlated with past, concurrent and future organisational measures. They examined whether nine specific HRM practices existed in the organisation, including major areas such as selection, training, pay for performance, performance evaluation, and participation. They found a positive relationship between these HRM practices and organisational performance.

From all the above studies and arguments, it can be said there is a relationship between HRM practices and product innovation. This is confirmed by multiple studies adopted in different contexts, such as HRM practices to promote learning, knowledge and creativity. Nevertheless, these studies failed to show which practices are more relevant and effective in promoting innovation; nor did they agree on the role of some practices such as appraisals and incentive systems. The studies show that innovation can be sustained through HRM practices that train, encourage, reward and build a career path for employees. Table 2.3 summarises a number of studies on HRM practices and product innovation.

Table 2.3: Studies on HRM practices and product innovation

Author(s)	Method/nature of the study	Sample size	Context	Finding(s) HRM practices
Cabrales <i>et al.</i> , (2009)	Quantitative / empirical	86 firms	Spain	Rewards, compensation and incentives
Friedmann <i>et al.</i> , (2010)	Quantitative / empirical	80 international European firms	India	Recruitment and selection
Jain <i>et al.</i> , (2012)	Quantitative & qualitative / empirical	- 3 companies with interviews - 66 HRM managers using online survey	India	Training, recruitment, performance appraisal, reward and career management

Jimenez and Valle (2008)	Quantitative / empirical	173 firms	Spain	Training, job design, recruitment and appraisal
Shipton <i>et al.</i> , (2006)	Quantitative & qualitative / empirical	22 firms	UK	Training, rewards, induction, appraisal and teamwork
Wichitchanya and Durongwatana (2012)	Review of literature / theoretical	Review of the literature on HRM practices and innovation	Literature review	Recruitment, training, performance appraisal and compensation
Zhao <i>et al.</i> , (2006)	Quantitative / empirical	194 high-tech firms	China	Training, motivation and incentives
Zhao <i>et al.</i> , (2012)	Quantitative / empirical	106 firms	China	Recruitment, rewards, job design and teamwork
Zhou <i>et al.</i> , (2013)	Quantitative/ empirical	179 high tech- and knowledge intensive firms	China	Commitment-oriented bundle (such as diversity-oriented selective recruitment, job enrichment, result-based appraisal)
Fu <i>et al.</i> , (2015)	Quantitative/empirical	120 accounting firms	Ireland (UK)	HPWs mediated by innovative employee work behaviours
Chowhan (2016)	Quantitative/empirical	3154 from workplace and employee survey- Statistics Canada (non-government business sector employers)	Canada	Skill-enhancing bundle of practices (recruitment and training).

Findings from these studies show that some found a positive impact of HRM practices on innovation. For instance, Jimenez and Valle (2005) found that recruitment, training, performance appraisal and compensation are positively related to product innovation, adding that HRM practices are considered as a prerequisite for adopting innovation. Similarly, a more recent study by Jain *et al.* (2012) found that training, rewards, appraisals and recruitment are among the HRM practices that organisations need to consider in order to foster product innovation.

2.11 OTHER HRM PRACTICES THAT MIGHT HAVE AN IMPACT ON PRODUCT INNOVATION

In contrast with advocates of the positive impact of HRM practices on innovation, other studies found that HRM practices have no impact on product innovation unless the mediating role of knowledge or creativity is taken into consideration. For example, Shipton *et al.*, (2006) added that HRM practices can affect product innovation when learning is considered. In other words, Shipton *et al.*, (2006) showed that HRM practices intended to promote product innovation, such as training, rewards, induction, appraisals and teamwork, in fact have no significant impact on innovation and should be geared towards learning rather than product innovation. These findings contradict some studies, such as those of Jain *et al.*, (2012) and Jimenez and Valle (2005).

From the above studies, two main elements can be identified. The first is the failure of the literature to look holistically at HRM practices and how these practices impact on product innovation. Existing studies on HRM practices are limited to a small number of HRM practices that promote innovation, although the literature identifies many more practices that could have a positive impact on innovation. Furthermore, existing studies concentrate on recruitment, training, performance appraisal and rewards. Second, studies on HRM practices and product innovation are inconsistent and do not show wide agreement on the role of different HRM practices such as appraisal in innovation.

Seeck and Diehl (2016) conducted a review on previous studies in the area of HRM and innovation. They found that existing studies lack a number of dimensions and that future research should consider the following: phases of innovation processes, introduction of radical innovation, more consistent measurement of HRM and innovation, and strengthened theoretical backgrounds that underpin the relationship between HRM and innovation. Table 2.4 is adopted from Seeck and Diehl (2016) and summarises the existing studies on HRM and innovation. This recent intriguing work by Seeck and Diehl (2016) strengthens the direction of this study. The number of studies that focus on measuring HRM and innovation is not sufficient. To date, only 35 studies have been designed to measure and explore the relationship between HRM practices and innovation. 90% of the studies adopted survey questionnaires to obtain data from Western and developed contexts around the world. In addition, measuring innovation based on employees' innovativeness counts for a shy number of five studies, which has led to calls for more research in the area of HRM practices and innovation awareness and commitment. Similarly, consideration of the degree of innovativeness in the new products is entirely neglected in these studies. The literature on HRM and innovation so far contains only one study that attempts to consider radical innovation in the relationship between HRM practices and innovation. Furthermore, whether the innovation approach is open or closed is not addressed in these studies. Confirming this pattern, it can be found in the literature on HRM and innovation that the first theoretical models integrating the HRM–innovation link were introduced 10 years ago. Therefore, based on these findings, this thesis has responded to calls for further research in the area of HRM practices and innovation, which this thesis tries to address.

Table 2.4 Overview of HRM and innovation studies (*n*= 35)

		<i>N</i> =	(%)
Methodology	Cross sectional	30	86
	Longitudinal	5	14
Methods	Survey Questionnaire	29	90
	Interviews	3	9
	Secondary data (data base)	4	13
	Focus groups	1	3
	Observations	1	3
Innovation	Employee innovativeness/innovative work behaviours	5	16
Measurement	Perceived product/technological innovation	19	59
	Perceived administrative/process/organizational innovation	16	50
	Perceived innovation strategy	1	3
	Estimated probability of innovation/perceived innovation	3	9
	Number/share/percent of sales of new products/services	6	19
	Radical innovation	1	3
	Incremental innovation	1	3
HRM	Individual practices	13	37
practices	Bundle of practices	17	48
Measurement	Both	5	14
Context of the study (Origin)	China	6	17
	Netherlands	5	14
	Spain	5	14
	United Kingdom	4	11
	Taiwan	3	9
	Ireland	3	9
	Denmark	2	6
	Australia	1	3
	Belgium	1	3
	Canada	1	3
	Germany	1	3
	Hong Kong	1	3
	India	1	3
	Malaysia	1	3
	US	1	3

Adopted from Seeck and Diehl (2016).

Given that studies of HRM practices and product innovation are inconsistent, this research investigates the role of HRM practices from a wider perspective by considering many more HRM practices and studying their potential impact on innovation, rather than being limited to a few practices such as training, rewards and appraisals.

In his *Handbook for Human Resource Management*, Armstrong (2011) identified a number of HRM practices that will be investigated here to study their impact on product innovation. Armstrong (2011) seemed to introduce a comprehensive list of HRM practices and their purposes. Thus, Armstrong (2011) along with other HRM models such as Harvard and Guest models will serve this research by considering HRM practices that he identified. Models of HRM practices such as Harvard, Guest, Bath People and others will not be tested *per se*; rather, these models have informed the researcher's thinking and logic in studying the relationship between HRM practices and innovation. These models seek to understand and measure the relationship between different variables, especially HRM practices (how they interact with each other) and their impact on organisational performance. However, in this study the researcher will measure the potential impact of HRM practices on innovation and identify which practices might potentially influence innovation. These HRM practices are categorised in four groups and each category contains a number of HRM practices as follows.

2.11.1 High-Performance Work Practices (HPWs)

HPWs, also known as 'best practices' (see, for example, Armstrong, 2011), are HRM practices suitable for all situations. The basic assumption here is that these HRM practices are universal and they are recognised as the best set of practices under any circumstances the organisation might face (Redman and Wilkinson, 2006). The importance of HPWs, according to Armstrong (2011, p. 251), stems from their being "an internally consistent and coherent HRM system that is focused on solving operational problems and implementing the firm's competitive strategy". Practices identified as HPWs may include selective hiring, high compensation and rewards related to performance, appraisal, training, promotion, job design and job engagement. The impact that HPWs are likely to have on innovation is

improvement of employees' performance, including financial performance, and their skills, intellectual assets and operation.

The importance and potential impact of each practice in this category is explained in the following paragraphs. Recruitment equips the organisation with talented employees, which helps in facilitating and promoting innovation. Moreover, recruitment policy helps the organisation to attain and retain skilled and knowledgeable employees. This can support innovation through the acquisition of employees who generate new ideas, solve problems and are experienced (Armstrong, 2011).

Compensation plays a role in enhancing employees' performance and attracts and retains highly skilled employees. In addition, it increases employees' willingness to achieve organisational goals and objectives (Jimenez and Valle, 2008). A rewards policy supports innovation by keeping employees motivated and encouraging them to become involved in organisational activities and commitments. Furthermore, rewards increase employees' willingness to participate in complex tasks, which will aid innovation by introducing solutions to challenges that may arise during the implementation of innovation and will make them more attached to the innovation movement in the organisation (Armstrong, 2011).

Performance appraisal helps in motivating employees to perform tasks as well as in recognising the gap between actual performance and organisational goals and objectives. It provides employees with the chance to enhance their performance and compete in a positive manner to improve their image in the eyes of management. This will help in promoting innovation by developing employees' performance and understanding of organisational goals (Jimenez and Valle, 2008).

Training is seen as a vital tool to improve employees' skills, enabling them to perform their tasks better. In addition, training helps in developing employees' knowledge, which is considered an antecedent to the innovation process. Training also keeps employees updated with the latest technology in the marketplace (Jain *et al.*, 2012).

Promotion may support innovation by moving and rotating skilled and knowledgeable employees within the organisation. It helps to use skills in a more efficient way. It can inspire employees to enhance their performance and abilities. In addition, promotion plays a role in motivating teams and helps the management to make the right decisions regarding talented and skilled employees (Armstrong, 2011).

Job design can support innovation by creating space for flexibility within the organisation and for multiple task orientation, which can positively support innovation (Anantharaman and Paul, 2003).

Job engagement supports organisational activities by involving employees more in these activities. Employees' satisfaction in performing tasks for the organisation is increased and they become more dedicated to their work. Additionally, motivation can build organisational citizenship behaviour, through which employees feel more loyal and attached to their work and do their best to perform tasks and meet organisational targets and objectives, which can support innovation in a positive way (Armstrong, 2011).

2.11.2 Motivation and Communication

This category includes a number of practices designed to increase commitment to work by developing levels of motivation and communication. In addition, it calls for recognition and consideration of motivational and communicational factors (Armstrong, 2011). This group of HRM practices tend to support employees' development through positive employment relations, communications and development. Additionally, they motivate employees to be more involved at work and develop their performance.

A number of practices are considered to have this effect: consideration and respect, employee development, retention management, motivation, employee relations, diversity management, grievances, communication and recognition. These practices are likely to have a positive impact on innovation by allowing employees to be more productive through recognition from the organisation. A positive impact can result from consideration of employees' circumstances when taking decisions, treating employees with respect, continuous development of employees' skills and abilities, listening to

employees regarding any issue they might want to raise, providing employees with equal opportunities at work regardless of sex, race or education, providing employees with the information needed to know what is expected from them, allowing employees to raise grievances with their managers, managing and resolving conflicts between groups of employees, and effective employee communication.

Consideration is about taking into account employees' circumstances when making decisions. This may have an impact on their security and engagement. Employees will be given more opportunities to prioritise their work so they can be more focused. This helps to enhance organisational performance and employees' commitment, which can have a positive impact on innovation (Armstrong, 2011). Respect entails treating employees with respect as humans. It also means that management should accept that employees are individuals and respect what they are able to do. This can increase their capacity to innovate by making them more satisfied, comfortable and committed to their work (Armstrong, 2011).

Employee development can support innovation by enhancing employees' skills as well as providing continuous development of their abilities. This will lead to a higher contribution to organisational goals and tasks. Moreover, development gives employees the chance to realise their potential and develop their career, which again can facilitate innovation (Armstrong, 2011).

Retention management is about procedures and planning regarding employees who leave the organisation, identifying who leaves and the reasons why they leave, and taking appropriate steps to retain useful employees. This will help in introducing innovation by identifying valuable employees and keeping them in the organisation so they can contribute to solving problems, enhancing performance and implementing new ideas (Armstrong, 2011).

Motivation can positively impact on employees' direct behaviour towards organisational commitment. It also increases their capacity to complete tasks with energy and persistence, as well as making them more attached to the organisation. Motivation supports innovation by driving the personal element

of engagement, and it can increase performance by inspiring employees (Cabrales *et al.*, 2009).

Employee relations between employees and management dictate how the work–pay aspect is managed, and they are designed to create and provide a productive workplace, a positive environment and trust among employees. This may facilitate innovation through promotion of teamwork, sharing of information and improvements in relationships with management, which reduce complexity in innovation (Armstrong, 2011).

Diversity management recognises the differences between employees and manages these differences appropriately. This helps in getting the work done more efficiently and utilising employees' skills effectively; employees feel more valued. Moreover, tasks can be distributed in a more professional way, and harnessing differences will create a more productive workplace, which can support the innovation process (Bassett-Jones, 2005).

Grievances can be discussed with managers and appeals made to higher levels if there is no resolution. This can support innovation by promoting equality and enhancing employees' security, job engagement and performance (Huselid and Delaney, 1996).

Communication can be direct or indirect, clear and persuasive, written or oral. Communication can facilitate innovation through knowledge sharing and the exchange of ideas. Most importantly, it enables management to find out employees' concerns, interests, thoughts and problems. Conversely, it informs employees about any changes, new procedures and tasks expected by the management (Armstrong, 2011). Recognition supports the rewards strategy because it shows respect for and acknowledgement of employees' achievements, either formally, through recognition arrangements, or informally, on a day-to-day basis (Armstrong, 2011). Recognition can stimulate innovation by motivating employees, enhancing their performance, showing more consideration and recognising their achievements (Armstrong, 2011).

2.11.3 Hygiene Factors

Working environment and working conditions practices involve providing a suitable environment for employees to perform tasks in (Armstrong, 2011). Practices under this category include work–life balance, health and safety, employee voice, employee security, equal opportunity, email and use of Internet and new technology. The likely impact on innovation is an increase in productivity, commitment and task proficiency, which helps to promote innovation (Armstrong, 2011). Working environment practices can also facilitate innovation by providing a healthy, safe, practicable workplace; allowing employees to have a balanced life by understanding their responsibilities and tasks outside work; giving consideration to working hours; preventing the use of the Internet for browsing or downloading materials not related to work; and consulting employees before installing new technology in the workplace.

Working conditions practices are about providing reasonable and motivating work conditions as well as a safe and healthy workplace. Also, they provide a practical, pleasant environment for work that can improve the quality of work. This can positively impact on the innovation process (Armstrong, 2011).

Work–life balance entails providing flexibility for employees in their work patterns, and conditions to create a balance between what they do at work and other interests and responsibilities outside work. It ensures that the number of hours worked will not affect their performance assessment. It sets guidelines for flexible working hours, teamwork, working contracts, working at weekends or at home, and giving special permission to leave work for personal reasons. This can promote innovation as it creates flexibility, commitment and engagement; reduces stress; and offers management support (Armstrong, 2011).

Health and safety covers how the organisation intends to provide a healthy and safe workplace. Moreover, conditions should state that the organisation will protect employees who might be injured or hurt during work. This can create space for innovation by allowing employees to feel more confident,

enjoy their work and feel safe, and thus increase productivity and performance (Armstrong, 2011).

Employee security entails employees not losing their jobs or feeling insecure or uncomfortable while working for the organisation. This will help in making employees more engaged, loyal and committed to their work. It will also increase their efficiency in performing tasks which will support the innovation process (Darwish 1998).

Employee voice provides employees with the opportunity to explore and say what they think regarding any issue that affects them. It empowers them to play a direct and indirect role in the process of decision-making. In addition, it enhances communication and organisational commitment if employees can discuss with the management any concerns that might affect innovation (Armstrong, 2011).

Equal opportunity for all employees, regardless of religion, sex, race, age, disability or marital status, means that no discrimination is permitted: it guarantees fair treatment for all employees in the organisation. This may positively affect innovation by encouraging employees to share information and become more confident, creating an employee-friendly environment and reducing complexity (Edgar and Geare, 2005).

Email and Internet use is about allowing employees to use and download materials from the Internet that are helpful and necessary for their work while preventing them from sending or downloading non-work-related materials. This can stimulate innovation by updating employees' knowledge, sharing information, protecting others at work, saving time, increasing productivity, and enhancing performance and communication (Armstrong, 2011).

New technology helps in explaining and providing employees with information when performing tasks or any technical related activity at work; steps should be taken to minimise the effect on other employees, such as redundancy. This can help innovation by enhancing productivity, speeding up task performance and solving problems (Armstrong, 2011).

2.11.4 Expectations and Information Sharing

HRM practices in this category are geared towards special arrangements and regulations that organisations develop in order to support and improve employees' information sharing, availability of information and expectations regarding their tasks (Armstrong, 2011). These practices are directed towards following up employees' and management performance, which can positively impact on the innovation process.

Expectations and information sharing include the following HRM practices: sharing information, redundancy, talent management, absence management and discipline. Organisations can benefit from these practices by making sure that employees are performing tasks as required and thus avoid wasting human capital. In addition, these practices play a role in making employees more attached to their organisation, with strong commitment and accepting and understanding the goals and values of the organisation. Moreover, organisational arrangements can help in recruiting and identifying talented employees, which in turn can encourage innovation, as well as following up employees' attendance and absenteeism.

Sharing information supports innovation by allowing employees to exchange ideas, knowledge and experiences, which might encourage the innovation process. This will support the generation of new ideas and solutions to problems. Moreover, sharing information helps in reducing complexity in performing tasks and promotes a spirit of teamwork, which may support innovation (Armstrong, 2011).

Redundancy aims to increase employees' security and uses retraining and development programmes to avoid making employees redundant. If redundancy cannot be avoided, then the affected employees should be treated in a fair way, with procedures in place to enable them to find suitable alternative employment. This can promote innovation by increasing job security, job engagement, fair treatment and commitment and enhancing productivity and performance (Armstrong, 2011).

Talent management is about identifying, recruiting, retaining and developing talented employees. Innovation can be promoted through talented employees

using resources efficiently. In addition, talented employees help in enhancing performance, introducing new ideas and solving problems (Lewis and Heckman, 2006). Absence management is about procedures and policies that are designed to reduce the level of absenteeism in the organisation. Absence affects ability to perform tasks and meet deadlines and level of productivity and reduces the flow of actions and processes such as innovation.

Absence management can support innovation by enhancing productivity, commitment, organisational engagement and performance, and saving time (Renwick, 2003). Job design is about the set of arrangements and procedures that have to do with autonomy and the structure of the job. In addition, it states the variety of tasks and the nature of the job.

Discipline gives employees the opportunity to know what is expected from them and what the consequences are if they break organisational rules. This helps both organisations and employees to be sure of the work that needs to be done and enhances quality, commitment and performance. It provides employees with clear statements of the tasks required, reducing complexity and thereby supporting innovation (Armstrong, 2011).

It is clear from the discussion above that the factors outlined and highlighted may be significant in influencing and promoting product innovation. This is the key question of this research.

2.12 CHAPTER SUMMARY

This chapter presented a literature review that focused on innovation and its management. It is divided into six sections. It started by showing the importance of innovation from different aspects: economic, academic, managerial, policy and political importance. Innovation is a source of economic development and also encourages growth for organisations. Not surprisingly, innovation has become a condition for survival in the current marketplace as a result of rapid competition, a globalising economy, rapid changes in customer needs, the reduced life cycle of products and technological advances. Another section is then offered which considered definitions of innovation by reviewing a timeline of their development from the

early work of Schumpeter in the 1940s and 50s. Following that a section reviewed innovation types is presented, and it was found that product and process innovation are the most widely discussed. At the same time, organisations themselves prefer to adopt product innovation rather than process innovation. Product innovation brings a number of benefits to organisations such as economic value, increased observability for customers, help in surviving the competitive environment and reduced life cycle of products. Given the importance of product innovation, a section dealing with drivers of innovation was introduced. Drivers of innovation are internal or external. Among external drivers, the literature on product innovation showed that customer needs, government policy and technological advances can promote product innovation. On the other hand, internal drivers include organisational structure, strategy and culture. Human resources are considered a vital source of product innovation, and organisations should pay more attention to human capital and their efforts; this introduced the role of HRM practices. To better understand the role and impact of HRM practices on product innovation, a further section examined the relevant research. HRM practices are vital for enhancing and developing organisational resources and capabilities, mainly through employees. The literature on HRM practices and product innovation shows that product innovation can be stimulated and promoted through certain HRM practices that influence employees' skills, knowledge and creativity.

A number of studies have identified practices that promote product innovation. Most are limited to discussion of recruitment, training, performance appraisal and rewards, and there is little exploration of the role of other HRM practices. Additionally, findings are inconsistent, with some studies identifying a positive impact of HRM practice on product innovation and others identifying a negative or indirect impact. This researcher investigated other HRM practices in order to further study their impact on product innovation.

The next chapter introduces the research methodology used to collect and analyse the data in order to meet the research questions, aims and objectives.

CHAPTER 3

RESEARCH DESIGN, METHODOLOGY AND METHODS

3.1 INTRODUCTION

The purpose of this chapter is to present the research design, methodology and methods used in this study. In doing so, it builds on the previous chapter by introducing research aims and questions that informed by the literature review discussed in Chapter 2. The previous chapter discussed the rationale of this thesis. As mentioned in Chapter 2, recent studies such as those from Shipton *et al.*, (2006) and Zhao *et al.*, (2012) bring into play the fact that internal drivers within organisations, specifically HRM practices, are potentially able to promote innovation. In addition to realising and addressing the possible positive impact of HRM practices upon innovation, the literature lacks consideration of a more comprehensive list of HRM practices that may influence innovation. The research on the HRM–innovation link is still limited and there is a failure to consider other HRM practices that promote innovation. Therefore, after discussion of the gap in the research in Chapter 2, a conceptual model is presented (Figure 3.1, below). The research aims and questions are then presented.

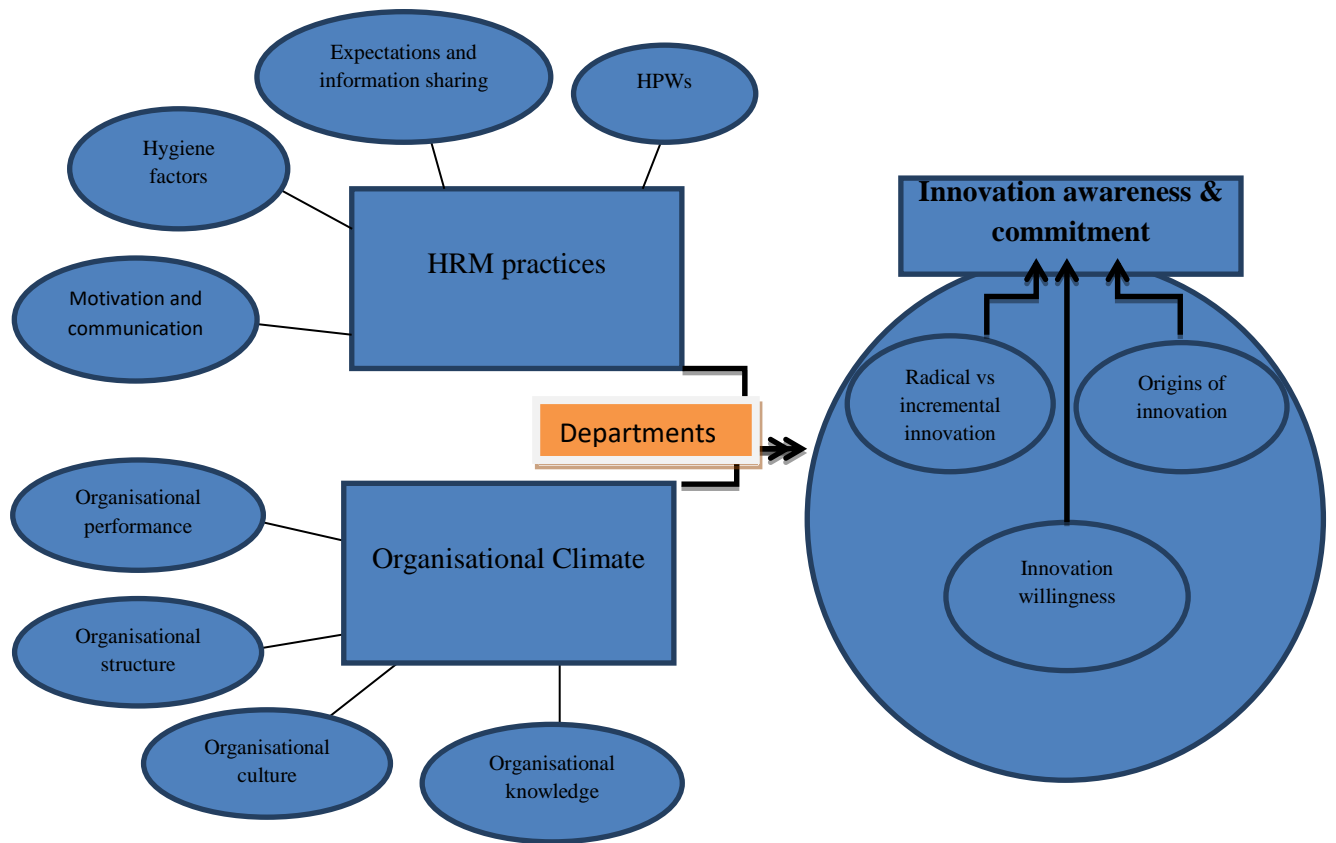


Figure 3.1: The relationship between HRM practices, organisational characteristics and product innovation. *Source: Author*

The proposed model shown in Figure 3.1 was developed based on the arguments in the literature review and the research aims. It conceptualises the hypothesised relationship between HRM practices and innovation. Perceptions of HRM practices (practices included in the elliptical shapes next to the HRM box) and organisational climate variables that might influence innovation awareness and commitment are captured in the figure above. The model consists of a number of elements as follows: HRM practices built up by the groups of practices as presented in Section 2.11, which represents RQ1a. Organisational climate contains organisational performance, structure, culture and knowledge, reflecting RQ2. Departments were also included in the model as one of the aims of the study is to study whether perceptions of HRM practices differ across departments. This reflects RQ1b.

On the right side of Figure 3.1, the dependent variables are presented. Innovation willingness, radical vs incremental innovation and origins of innovation form the dependent variables and they are all inserted to measure

innovation awareness and commitment, as displayed at the top of the dependent variables.

The chapter begins by offering research aims (see Section 3.2). Following that, the research questions are presented in Section 3.3. Then the philosophical paradigm adopted in this research is discussed and justified in Section 3.4. Then the research approach is provided and justified (see Section 3.5), followed by the research strategy (see Section 3.6). The data collection procedure for phase one of the research is then discussed in Section 3.7. The section proceeds to present the study population, the country profile, HRM in the Middle East within the context of Jordan, the choice of industry, the participating companies and the sample size. The sample selection and respondents for the first phase are introduced. The measuring instruments for phase one are detailed (see Section 3.8). The chapter goes on to present the data collection procedure in Section 3.9, data analysis tools and techniques in Section 3.10. Following the introduction and discussion of phase one of the research, the chapter then introduces phase two of the research. Data collection methods for phase two is offered (see Section 3.11) entailing a number of sub-sections presenting the study population of phase two, covering sample selection and respondents. Subsequent to that is a section covering the instruments used to collect data in phase two (see Section 3.12). Then the data collection procedure for phase two is discussed in Section 3.13. Following that, a section on data analysis is introduced (see Section 3.14). Ethical considerations are then addressed and discussed in Section 3.15. Finally, a summary of the main issues and discussions in this chapter is presented in Section 3.16.

The construction of this chapter is informed by the research processes onion proposed by Saunders *et al.*, (2003). The research processes onion displays the development and route that research in the field of social sciences is likely to follow. Figure 3.2 presents the research onion processes.

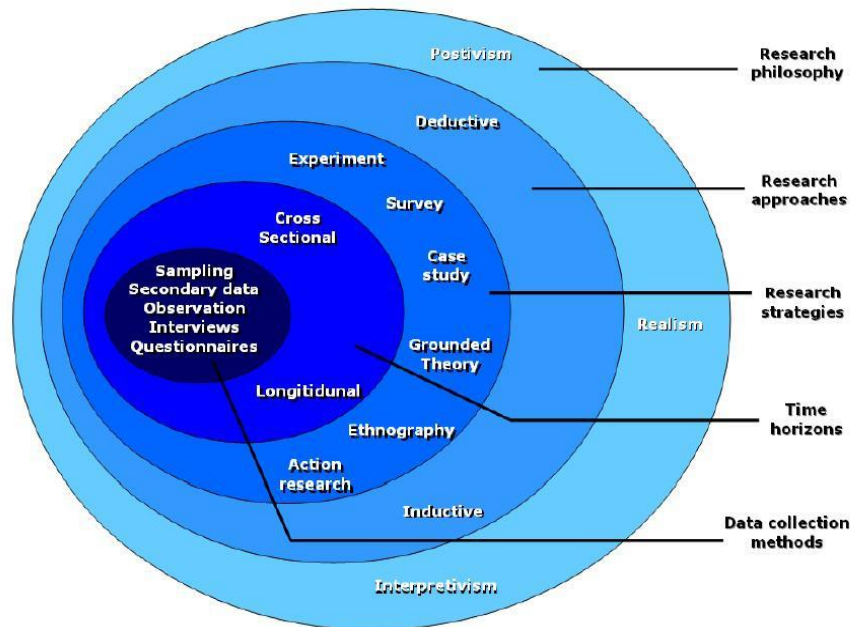


Figure 3.2: Research processes onion.

Source: Saunders *et al.*, (2003: 83)

3.2 Research Aims

The overall aim of this research is to study employees' perceptions of the relationship between product innovation and HRM practices. The model outlined in Figure 3.1 represents how this study will explore the relationship between HRM practices and product innovation, as HRM practices have been identified as an underlying factor promoting product innovation.

In other words, the aim of this research is to investigate the role of HRM practices underpinning product innovation, and to study the relationship between HRM practices and product innovation, and thus to gain insights into the importance of product innovation. This study therefore extends existing studies on HRM practices and product innovation by studying the role and effect of other HRM practices on product innovation. Moreover, the research studies the relationship between HRM practices and open/closed radical or incremental product innovation at the intra-organisational level. The research also aims to advance our understanding by examining the differences between departments in promoting innovation awareness and commitment. Building on these clarifications, the aims of this research are as follows: to identify which HRM practices that have been excluded and neglected in

previous studies may promote innovation awareness and commitment. Furthermore, the main aim is to study employees' perceptions of HRM practices that might influence innovation. In addition, this research looks at the intra-organisational impact of HRM practices on innovation awareness and commitment by seeking to study employees' perceptions of HRM practices on innovation. Moreover, the degree of innovativeness (radical vs incremental) and type of innovation is considered in this research. In line with the intra-organisational scope of this research, the research looks into whether departments differ in their responses to the role of HRM practices in promoting innovation. Organisational climate factors incorporating performance, structure, knowledge and culture are examined in an attempt to identify internal drivers that may impact on innovation awareness and commitment.

3.3 RESEARCH QUESTIONS AND HYPOTHESES

In order to fulfil the research aims mentioned above, two main research questions were formed:

RQ1– *To what extent is there a relationship between employees' perceptions of HRM practices and innovation awareness and commitment?*

This is the main research question, and it considers the hypothesised relationship between HRM practices and innovation awareness and commitment at the intra-organisational level in which employees' level of awareness is considered. This main question consists of two sub-questions. The first sub-question considers the degree of innovativeness and approach to innovation in studying the relationship between HRM practices and innovation. Moreover, RQ1a is designed to study the relationship between HRM practices and radical open innovation. The distinct contribution this question attempts to make is to consider the degree of newness and innovativeness along with the approach to innovation. The role of the nature of departments in which HRM practices promote innovation is considered. Therefore, RQ1b questions whether departments differ in terms of which HRM practices promote innovation.

RQ1a– *What are employees' perceptions of the relationship between HRM practices and radical open innovation?*

Product innovation is influenced by a number of factors and drivers. HRM practices have been identified in the literature review as having an impact on product innovation (see Chapter 2). HRM practices can promote product innovation through a number of practices such as training, recruitment, performance appraisal and rewards (see Section 2.8). In addition, the literature review on HRM practices and product innovation offers a less clear view of the role of some HRM practices and of how these practices are related to product innovation. For example, the role of appraisal in promoting product innovation is less clear: whereas a number of studies found a positive impact on product innovation, others found that there is a negative impact on innovation (see Section 2.8). Such findings create a need for a more holistic consideration of the role of HRM practices in sustaining innovation. Consequently, this research question is formulated to identify HRM practices that are significant for innovation. To do so, a number of hypotheses are developed to study and identify which HRM practices are related to product innovation and which HRM practices are most significant in promoting product innovation. Existing HRM models and Armstrong's (2011) handbook have provided a comprehensive list of HRM practices. However, this study does not measure or test any model for HRM practices or any theory proposed by Armstrong (2011); rather, this study generates a theory by using the list of HRM practices provided by the HRM models and Armstrong (2011) in an attempt to obtain a comprehensive list of HRM practices. The degree of innovativeness in the new products, oscillating between incremental and radical innovation, is addressed in this question, as this is poorly examined in studies relating to HRM practices and product innovation. Besides this, previous studies seem to have neglected the innovation approach. This question attempts to identify whether HRM practices influence awareness of and commitment to radical open innovation: that is, to study the extent to which HRM practices potentially impact on the innovation approach and the degree of innovativeness, in order to advance our understanding of the likely impact of HRM practices on innovation. Therefore, RQ1a aims to study employees' perceptions of HRM practices on radical and open innovation.

These hypotheses are developed to explore this research question by considering a comprehensive list of HRM practices. Additionally, hypotheses regarding the demographic characteristics of respondents are also developed. The purpose of these hypotheses is to explore the potential influence of respondents' characteristics on their awareness of and commitment to product innovation.

RQ1b– Do employees in different departments (HRM/Sales) and (R&D/Product development) vary in their perceptions of the relationship between HRM practices and innovation awareness and commitment?

The role of departments in becoming more aware of and committed to innovation is addressed. HRM, Sales, R&D and Product development departments and their level of awareness of innovation are studied. This sub-question seeks to measure whether employees perceive departments to be significant to the relationship between HRM practices and innovation; identifying whether departments differ in terms of which HRM practices promote innovation is the main aim of this sub-question.

A number of hypotheses are developed to answer this question, attempting to study whether departments vary in their awareness of innovation and, as a result, to identify whether certain departments are more responsive and aware of and reactive to HRM practices.

RQ2– To what extent do employees perceive organisational climate to influence their awareness of and commitment to innovation?

This question addresses the relationship between organisational characteristics and innovation awareness and commitment. Organisational characteristics are measured in this question based on four dimensions: organisational performance, organisational structure, organisational knowledge and organisational culture. The question is designed to extend the view of internal drivers in promoting product innovation. As reviewed in Section 2.8, HRM practices can potentially impose a positive influence on the organisation through promoting a flexible structure and knowledge sharing. Therefore, based on the suggestions regarding the role of HRM practice in promoting product innovation generated by the literature review (see Chapter 2), the purpose of this research question is to identify and test further internal

drivers and their role in influencing product innovation. This combination might allow better insight into the essential role of each HRM practice and organisational characteristics, in addition to examining whether other variables are prioritised over HRM practices. A list of hypotheses for the research questions is presented below:

H (A): Employees have positive perceptions in relation to:

- 1- HPWs promoting open innovation.
- 2- Expectations and information sharing promoting open innovation.
- 3- Hygiene factors promoting open innovation.
- 4- Motivation and communication promoting open innovation.
- 5- Organisational climate promoting open innovation.

H (B) Employees have positive perceptions in relation to:

- 1- HPWs promoting radical innovation.
- 2- Expectations and information sharing promoting radical innovation.
- 3- Hygiene factors promoting radical innovation.
- 4- Motivation and communication promoting radical innovation.
- 5- Organisational climate promoting radical innovation.

H (C): Departments significant in the way employees perceive the relationship between HRM practices and innovation.

3.4 RESEARCH PHILOSOPHY

Research philosophy is associated with the nature and objective of any research study (Bryman, 2012; Gray, 2009). Classically, there are two main philosophical schools of thought: positivism and phenomenology. These two paradigms are considered as overarching philosophical positions in social sciences studies, with significant standpoints for each paradigm in approaching knowledge and reality (Creswell, 2009; Saunders *et al.*, 2003). The research philosophy adopted donates research approaches and strategies as indicated in the research onion processes presented in Figure 3.2 above.

3.4.1 Positivism

Positivism recognises the knowledge of the social world gained as a result of the interaction with and quantification of the social world's objects (Bryman, 2012). Knowledge is derived from studying the causal relationships that form the objects of the social world (Gray, 2009). Positivism holds that knowledge regarding specific phenomena is derived from objects external to individuals and that knowledge can be observed and gained from an objective viewpoint (Gill and Johnson, 2002). So, in positivist research there is a single reality and generalisation of knowledge is possible. A positivist researcher should be detached from participants by creating a distance between himself/herself and participants and should distinguish between real facts, feelings and emotions (Carson *et al.*, 2001). Positivism is linked with quantitative methods, allowing the measurement and exploration of causal relationships based on a number of hypotheses and assumptions which, in the end, the research will verify or falsify (Creswell, 2003).

3.4.2 Phenomenology

Phenomenology, on the other hand, takes a different standpoint on perceiving knowledge and reality from that of positivism. Phenomenology entails the participation of the researcher as part of acquiring and understanding knowledge and reality (Bryman, 2012). The phenomenologist researcher tries to understand what things mean rather than measuring a specific phenomenon and to answer questions relating to the unique assumptions that may explain a given phenomenon. Mainly, researchers who follow the phenomenological approach consider human experiences as an integral part of knowledge. They try "to understand the reality or perhaps a reality working behind them" (Remenyi *et al.*, 1998, p. 35). Consequently, phenomenology is more concerned with providing explanations than measuring estimations and predations. Phenomenology is linked with qualitative data collection methods such as semi-structured interviews, focus groups, ethnography and observation, with the opportunity to gain deeper understanding of specific concerns (Creswell, 2009).

Following a single philosophical paradigm would not help much in providing greater understanding while studying the relationship between HRM practices and innovation and answering the research questions.

Although each philosophical paradigm is presented as distinct from the other, it is widely asserted by researchers that a research study should not be limited to a single perspective defined by its philosophical stance; rather, significant benefits to and understanding of research studies can be gained from the consideration and combination of aspects of both approaches (Bryman, 1988; 2012; Willmott, 1993; Watson, 1997; Creswell, 2009).

The integrative approach of combining both philosophical paradigms is recognised as 'pragmatic pluralism'. This approach was proposed and popularised by Watson (1997). Pragmatism takes a design according to situations, actions and consequences (Creswell, 2009). This approach is pragmatic because there is a need to answer the question 'what is it that I want to know?', which will lead to the truth. Pluralism allows greater insights into complexity and ambiguity for which a phenomenon is under assessment due to the integration and combination of different traditions (Reed, 1985), which will help in producing a single coherent perception (Watson, 1997). Researchers following pragmatic pluralism tend not to implement the specific guidelines for methodological approaches of a particular paradigm; rather, they try to adopt different elements and components and form their own adjusted and integrated paradigm, which has its own epistemological, ontological and methodological consistency and integrity and which is clearer and more understandable for both researchers and their audience (Watson, 1997). This research is a mixture of intensive and extensive research (Sayer, 2000; Richards, 1996). 'Extensive' means that the research tends to identify and quantify measurements of the relationship between a number of units over a sample size, usually a large sample size (Richards, 1996). Intensive research entails a small number of case studies, or even one in some cases, allowing the measurement and clarification of the mechanics behind a given phenomenon (Richards, 1996).

Some researchers (Biesta, 2010; Gorard, 2007) argue that the adoption of the pragmatic pluralism paradigm, despite it aiding the researcher to combine

elements from different methods to create a practical research approach, is likely to create tension between different philosophical schools. Pragmatic pluralism is able to offer guidance for workability; however, it is less able to articulate specific philosophical stands. It can create a tension in relation to what sort of assumptions should ground this paradigm. An example of this is how the practicality of pragmatism can resolve a clash or tension between qualitative and quantitative approaches since the methodological discussion around this is already in tension. This can lead to a paradigm war: which paradigm should lead the process of answering research questions or phenomena? To this end, the combination of different elements implies the combination of different sorts of philosophical stands, and therefore it might be not clear what form of philosophy is likely to dominate and consist the pragmatic position, which in other words might indicate a challenge in identifying ontological and epistemological strands for the phenomena.

Watson (1997) argues that subjects and fields in the social sciences – and particularly in management and organisation studies – that involve complex and multifaceted issues are encouraged to use the integrative approach, because combining approaches can minimise the challenges and problems associated with studying such multifaceted and multidimensional subjects. The integrative approach of pragmatic pluralism can also reduce difficulties and complications in the research if the design is adequate and satisfactory and the management disciplines studied are not used indiscriminately (Watson, 1997). For researchers, taking the approach of pragmatic pluralism involves requirements that are outlined and highlighted by Watson (1997). A researcher is not required to produce and generate a comprehensive theoretical perspective like a theory specialist does. Rather, a researcher under such umbrella is required to establish the particular grounds for the credibility of their theorising. Pragmatic pluralists' theory must be reasonable, credible and plausible to the reader and provide insights and understanding that appear to be valuable and worthwhile for the reader. To avoid being haphazard, the research must be coherent, with a logical flow, and have its own assumptions and framework to increase its credibility, integrity and reasoning. In addition, in order to sustain a logical mechanism designed to identify a specific theoretical framework or understanding of the topic being

researched, researchers are highly encouraged to engage with and draw elements from various disciplines and subjects. This is the case when studying the relationship between HRM practices and innovation, where different disciplines in the field of management studies are combined and studied. The theorising of HRM and innovation provided in Chapter 2 and the operation of the research covered in the following chapters are in response to pragmatic pluralism. Moreover, both subjects entail an extensive and rich body of literature, which, in addition to providing sufficient clarification and understanding, also extends and broadens the research into a mixture of complexity, ambiguity and areas that need further exploration and study.

Therefore, since this research aims to assess the relationship between HRM practices and innovation, as well as explaining the predictors of the relationship following quantitative data collection methods, the philosophical paradigm of this research will be a mix of positivism and phenomenology, mentioned above as 'pragmatic pluralism'.

3.5 RESEARCH APPROACH

Research approaches are closely related to research philosophy; in this research, as mentioned above, the research philosophy is a pragmatic pluralism paradigm. Pragmatic pluralism follows a complementary approach of both deductive and inductive approaches, whereby quantitative and qualitative methodologies are applied to serve as data collection umbrellas.

Research approaches are closely related to research philosophy; in this research, as mentioned above, the research philosophy is a pragmatic pluralism paradigm. Pragmatic pluralism follows a complementary approach of both deductive and inductive approaches, whereby quantitative and qualitative methodologies are applied to serve as data collection umbrellas. The philosophical position of pragmatic pluralism allows the researcher to choose the research approach that seems meaningful, practical and helpful in answering research questions. In most studies that looked at similar research questions to understand the HRM–innovation link, a deductive approach was the main approach. In addition, and most profoundly, as this research seeks to study the relationship between HRM and innovation, this therefore implies the adoption of an approach that fits with this aim.

Moreover, the research is based on existing theoretical frameworks. This suggests the use of the deductive approach as it appears to adequately fulfil the research aims and questions. Thus, in the light of the above discussion, this research will follow a deductive approach in the first place. A primarily deductive research approach is adopted. The inductive approach is adopted as well. This is in line with the pragmatic pluralism umbrella, which refers to combining elements of existing approaches to best serve the research. Adopting a mixed deductive and inductive research approach was as the following consequence: the research is primarily deductive, then, based on the outcome of the deductive approach, the researcher decided to mix this approach with the inductive approach to allow a better understanding of the answers obtained by the deductive approach.

By mixing research approaches, the pragmatic pluralism paradigm helps to shed light on phenomena in the real world: problems, explanations and solutions. In order to distinguish between the deductive and inductive approaches, Table 3.1 highlights the major differences between them.

Table 3.1 The main differences between the deductive and inductive approaches.

Deduction emphasises	Induction emphasises
<ul style="list-style-type: none"> • Scientific principles • Moving from theory to data • Need to explain causal relationships between variables • Collection of quantitative data • Application of controls to ensure validity of data • Operationalisation of concepts to ensure clarity of definition • Highly structured approach • Researcher independence from what is being researched • Necessity to select samples of sufficient size in order to generalise conclusion 	<ul style="list-style-type: none"> • Gaining understanding of meaning humans attach to events • Close understanding of research context • Collection of qualitative data. • More flexible structure to permit changes of research processes • Realisation that researcher is part of research process • Less concern with need to generalise

Source: Saunders *et al.*, (2003, p. 89).

3.6 RESEARCH STRATEGY

Two main approaches associated with inductive and deductive reasoning are at the disposal of the researcher, namely qualitative and quantitative. This research adopts mixed methods in line with its deductive and inductive approaches, as listed in the research processes onion shown in Figure 3.2.

The research strategies listed in the third layer of the research onion processes shown in Figure 3.2 above consist of survey, case study, experiment, grounded theory, ethnography and action research. This research consists of two phases. The first phase of this research is mainly

quantitative, entailing the use of a survey questionnaire to be distributed by the researcher himself to employees in the participating organisation. A survey questionnaire allows the researcher to cover a large sample size by providing access to a considerable amount of data economically and quickly, as well as helping to generalise the findings (Gray, 2009; Bryman and Bell, 2003; Bryman, 2012; Hair *et al.*, 2003). The second phase is qualitative and is conducted through semi-structured interviews with the participating organisation. Both phases are detailed in the following sections. The fourth layer in the research onion represents the time horizon. This research is considered as cross-sectional since the data was collected all at once, not repeatedly over a specific period of time.

This study is concerned with management practices and organisational arrangements, which requires deep understanding of which practices organisations tend to adopt and the rationale behind these practices. Also, exploring and understanding people's experiences, attitudes and perceptions of HRM practices that might influence product innovation will broaden and advance understanding of the research questions and needs.

This matches the current research study, which explores the relationship between HRM practices and product innovation in the Jordanian telecommunications industry. Adopting the mixed methods approach allows the measurement of the relationship between multiple variables based on a number of hypotheses and assumptions and, at the end, the researcher will verify or falsify the hypotheses. In designing a search approach and strategy, one should be aware of the following: it is worth mentioning that, as stressed earlier in this research, as the aim is to study perceptions of HRM practices that impact on innovation, it could be that employees who perceive their workplace as innovative and as encouraging them to innovate are more likely to perceive HRM practices favourably. However, this study does not aim to study this causality or assume so; rather, perceptions of HRM practices that might have an impact on innovation awareness and commitment are the main scope of this study.

Quantitative methods allow the researcher to access a large number of potential participants, which can enhance the credibility and generalisability

and the findings of the research. In addition, the use of a questionnaire survey is economical and time-saving. However, although this research is primarily quantitative, the use of other qualitative methods is fruitful for the research. Semi-structured interviews are conducted to enhance understanding of the patterns observed in the quantitative research. Interviews also help in explaining and demonstrating why such results and findings acquired from the first phase are observed.

3.7 DATA COLLECTION METHODS: PHASE ONE

The fifth layer in the research processes onion includes data collection methods: questionnaire, interviews, observation and secondary data. In this research, questionnaire and interviews were adopted as the methods for collecting data.

The first phase of the research used a questionnaire survey to collect data from a large number of employees in order to study the relationship between HRM practices and innovation.

3.7.1 Country Profile

The research was conducted in the Hashemite Kingdom of Jordan. Jordan is a relatively small country in the Middle East (Figure3.3) with a total area of 89,318 sq. km and a population of 6.6 million (DOS, 2013). The financial and economic capital is Amman, located in the north of the country. Jordan is considered as a developing country that is struggling for economic survival due to its limited natural resources and its location in an unstable region, sharing borders with Iraq, Saudi Arabia, Syria and Israel. Jordan is a constitutional monarchy ruled by King Abdullah II.



Figure3.3: Jordan's location in the Middle East.

Jordan is the home country of the researcher, which gives him an advantage as he is familiar with language issues, culture, meaning of expressions, attitudes and ethical issues. In addition, collecting data from companies is easier in a researcher's home country.

Economists in Jordan, a developing country with an emerging economy, believe that innovation is the main gateway to developing its economy (World Bank Jordan Economic Monitor, 2013). There is a lack of empirical studies regarding HRM practices and innovation in developing countries, including Jordan (Zhao *et al.*, 2012), which especially needs further empirical studies and research on how product innovation can be sustained through HRM practices, to support decision-makers in adopting, developing and modifying policies to promote innovation.

3.7.2 HRM in the Middle East: The Context of Jordan

Contextually, scholars have conducted a number of research studies in non-Western countries, and particularly in the context of Jordan (Aladwan *et al.*, 2013; Abu-Doleh, 2000; Altarawneh, 2009). Studies in the Jordanian context examined the role of HRM practices in promoting organisational effectiveness and performance. However, the literature shows that there is no strong belief or strategic orientation towards HRM practices within most organisations in Jordan. There is therefore a need for intensive research to be conducted to measure the role of four main HRM practices: recruitment

and selection, training and development, performance appraisal, and rewards and benefits (Aladwan *et al.*, 2013).

At the same time, research (Altarawneh, 2009; Darwish *et al.*, 2013; Al-Husan *et al.*, 2009) demonstrates that little attention has been paid in Jordanian organisations to HRM departments and their duties and responsibilities. Additionally, despite the fact that most Jordanian organisations have HRM departments, their role is limited to the administrative concerns of employees, mainly recruitment and retirement (Afana, 2004). In the same vein, even HRM practices such as recruitment and selection in Jordan and the Middle East are rarely systematic or objective (Al-Husan *et al.*, 2009).

Moreover, in the Middle Eastern context, management practices including HRM are characterised as a “top down management style which emphasises motivation by control rather than results” (Al-Husan *et al.*, 2009, p. 106). Bureaucracy and controlling management systems are the main themes in practices such as promotion, training and empowerment. Likewise, other HRM practices such as training are considered a waste of time, leisure, given to friends and having no added value.

In challenging the judgements addressed above, a study by Darwish *et al.*, (2013) conducted in the financial sector in Jordan showed that several HRM practices (recruitment, training, performance appraisal and internal career opportunities) have been adopted and are having a positive impact on organisational effectiveness and performance.

Similarly, Aladwan *et al.*, (2013), in a study of 276 organisations in Jordan’s insurance, accounting, finance and services sector, identified the nature of HRM practices and a potential future direction. They found that various HRM practices had been adopted: recruitment and selection, training and development, performance appraisal, and rewards and benefits. Aladwan *et al.*, (2013) concluded that these practices form a multidimensional construct for the HRM practices in Jordan.

Although a number of studies have been conducted in the context of Jordanian organisations, the present research does not intend to contribute to this body of knowledge, to confirm or disagree with previous work, or to build a theory regarding HRM practices in Jordan. Rather, this research makes an academic contribution regardless of the context of the study, by applying and testing existing theory on innovation and HRM in Jordan. Therefore, the next section presents existing research and studies on HRM practices and innovation in order to understand the main arguments and place the research study in a clearer context. Moreover, it helps in clarifying and demonstrating the research contribution regarding HRM practices and innovation.

3.7.3 Choice of Industry

The survey questionnaire was distributed to companies in the telecommunications industry in Jordan. The importance and relevance of this industry to the research study is discussed below.

With the global spread of the Internet and increasing mobile and landline usage in Jordan, and the resulting increase in demand for telecommunications products and services, the telecommunications industry is one of the most innovative industries in Jordan and is important for the economy as a whole (TRC, 2012). The telecommunications industry in Jordan is relatively mature and saturated, and it is considered one of the most competitive in the Jordanian market (TRC, 2012). Telecommunications companies face intense competition and expect more challenges in the coming years. Their profit is eaten away by costs and charges as well as the threat of new players entering the market.

This emphasises that companies in the telecommunications industry in Jordan are forced to find new products and innovations to survive and gain competitive advantage. Furthermore, the telecommunications industry plays an important role in boosting the Jordanian economy. More than 10% of Jordan's GDP is contributed by telecommunications companies, which makes it one of the most dynamic and important industries in the country (World Bank Jordan Economic Monitor, 2013).

There are three telecommunications companies in Jordan, which offer a wide range of products and services: Zain-Jo, Umniah and Orange-Jo. They provide innovative products such as Internet dongles, which are relatively new in the Jordanian market. Recently, a new device was launched that allows companies and individuals to track and retrieve their cars in case of theft. Zain-Jo has launched a new product called Smart2GO, which allows customers to turn their existing televisions into smart ones, enabling them to browse email, Internet and social media and read news through their TV. These companies constantly improve and expand the infrastructure, for example by acquiring a 4G network to provide customers with a faster, better Internet connection. All three companies provide intelligent Internet routers that enable customers to browse the Internet at high speed and also make phone calls without the need for another phone. Umniah is prominent in this, while Zain-Jo allows customers to transfer money online.

The competition in the telecommunications industry in Jordan is relatively new (Alamro and Rowley, 2011), with Zain being the first in the market in 1994. Orange and Umniah entered the market later, in the late 1990s and early 2000s (TRC, 2012). Umniah is a Jordanian company established by a group of Jordanian business people (TRC, 2012; Umniah-Jordan, 2014). Orange was originally a Jordanian company, established by Hutchison Telecommunications in 1994 (Alamro and Rowley, 2011); then in 2000 it came under the ownership of a French telecommunications company. It operates in Jordan as the sole provider of landlines (Orange-Jordan, 2014), and as other competitors for mobile service and broadband. Therefore, Orange is the only global telecommunications company in Jordan. Global competition in the Jordanian telecommunications industry does not widely exist; there are no other companies such as Vodafone or other providers apart from the two Jordanian companies (Zain and Umniah), and the French-Jordanian company Orange (Alamro and Rowley, 2011). A fourth company called Xpress was in the Jordanian market at one point; however, it was shut out of the market (Alamro and Rowley, 2011). The market, therefore, takes the form of an internal competition rather than there being continuous threats from global telecommunications companies at the present time.

It is very important for Jordan to continuously improve the telecommunications industry as the government believes it is a way to further link the country and its economy with the competitive global economy (TRC, 2012). Economic growth is strong and has a direct impact on the telecommunications sector. There are also government initiatives to support the telecommunications industry in Jordan, showing the important role it plays. Two main bodies regulate the telecommunications sector in Jordan: the Ministry of Information and Communication Technology, and the Telecommunications Regulatory Commission (TRC).

Telecommunications companies in Jordan pay attention to continuous development of their employees and resources in order to develop new products and enhance their market position (Orange-Jordan, 2014). Moreover, as Jordan lacks natural resources and infrastructure (such as oil and heavy industry), there is a pressing need to recognise and develop the role of human capital to foster growth and turn the economic wheel (World Bank Jordan Economic Monitor, 2013). This stresses the need for companies to pay more attention to their human capital, their main asset in promoting economic development, competitiveness and successful new products and services. Recognising the importance of human resources, the telecommunications companies concentrate on developing employees' skills and abilities so they can handle change, enabling the companies to deal with challenges in the marketplace and contribute to national economic growth.

Zain-Jo, Umniah and Orange-Jo provide a wide range of innovative products and services. For example, Zain-Jo was awarded an innovation prize in London in 2014 for its remarkable contribution to Jordan's economic development and its innovative products and services (Zain-Jordan, 2014). Similarly, Orange-Jo has a department dedicated to training employees to be more creative, providing them with skills and supporting new ideas (Orange-Jordan, 2014). Umniah believes in designing innovative products for customers, to contribute to economic development, enrich customers' experience and ensure their loyalty (Umniah-Jordan, 2014).

As discussed in Section 3.6, this research follows the mixed methods approach. Primarily, the research broadly but not exclusively adopts a

quantitative methodology using a questionnaire survey. The second stage of the research follows a qualitative methodology whereby semi-structured interviews are adopted to collect data from participating organisations.

3.7.4 Study Population

The research sample or population consists of the events, observations and groups of people that the researcher is interested in studying and investigating (Yin, 2014). For this research study, the population consisted of employees within the Orange Telecommunications Company. Employees form the population of the study since the study is concerned with the intra-organisational level and is intended to study their perception of the HRM–innovation link. The survey questionnaire was distributed to Orange, from whose staff potential participants were identified within specific departments. The departments selected to participate and employees within these departments are discussed in the next section.

3.7.5 Survey Questionnaire: Sample Selection

Orange was approached and asked if they were willing to participate via letters highlighting the research outline and the value and importance of Orange's participation. Letters were addressed to public relations manager to gain Orange's agreement to participate. After gaining this approval from the public relations manager through a response letter, a contact person was identified in the response letter. Following the appointment of a contact person, a materials package consisting of the questionnaire survey and guidelines was compiled and sent to the contact person. The letter also highlighted to the main contact person the desired departments that were relevant to the study. A follow-up phone call was made to the contact person in Orange to arrange the delivery and distribution of the questionnaire survey. After making the arrangements with the contact person in Orange, the researcher distributed copies of the questionnaire survey manually himself. Orange was approached and asked to specify which departments are engaged with innovation activities. The sample consisted of employees within specific departments as discussed in Chapter 2. Employees were from HRM, Sales, R&D and Product development departments. Employees across the different participating departments were sent the same questionnaire

containing the same questions. This was done because the research aims to study perceptions of HRM practices that might influence innovation. Perceptions can be shared, and HRM practices are implemented at all levels in an organisation (Boxall and Purcell, 2003), so it is very challenging, especially given the lack of studies concerning the HRM–innovation link at the intra-organisational level, to split departments based on differences on perception. A perception is likely to be shared among individuals in the organisation since innovation requires collaboration and efforts from different units in the organisation. This study does not aim to presume that there are differences in perceptions (especially as no research known to the researcher has made this claim); if this was the case, then each department would be sent a different set of questions.

The rationale behind the selection of these departments is that these departments' tasks are closely related to innovation; previous studies concerning innovation management, HRM and organisational outcomes have concluded that a crucial factor in introducing successful innovations is effective collaboration and interaction across technical, manufacturing, marketing and sales departments, which sheds light on the added value of these departments in innovation activities (Bonnet, 1986; Dean and Susman, 1989). Additionally, Orange was asked to specify which departments are engaged in innovation and related activities. Moreover, this research is concerned with studying HRM and innovation; thus, the potential role of employees in promoting and introducing innovation can be viewed and perceived by employees as pre-innovation, innovation-focused, and after-innovation. Pre-innovation and after-innovation processes are performed by employees within the HRM and Sales departments. Similarly, innovation-focused activities represent the actual implementation of innovative ideas, scientific articulation and the transformation of ideas into new products and services, and this work is the responsibility of employees in the R&D and Product development departments. HRM and Sales departments represent the technical and marketing aspects of innovation activities and can read the signals in the marketplace and identify customers' needs (Christensen, 1997; Sambrook *et al.*, 2011). Other departments such as call centres could have been included; however, innovation might sometimes be subjected to

unnecessary negative collaboration when different departments are involved, as they might split information rather than connecting the flow of ideas and solutions, which can separate rather than combine attempts to innovate. This can be due to differences in cognitive styles, languages used and power in the workplace (Tushman, 1978; Riley, 1983), yet when Orange was asked which departments were associated with innovation, it was found that these departments (HRM, Sales, R&D and Product development) were the main departments engaged in innovative activities.

3.7.6 Survey Questionnaire: Respondents

The process of sample selection described above resulted in the distribution of 280 questionnaires. Participation was on a voluntary basis, and prior to administration of the questionnaire survey Orange was allocated a specific code, in addition to the coding of each participating department, which permitted the researcher to distinguish between participating departments. Table 3.2 summarises respondents' characteristics for gender, department, age and level of education.

A total of 280 questionnaire copies were distributed. No missing questionnaires were identified; this might be a result of the manual distribution and collection of the questionnaire by the researcher. Of the 280 questionnaires, 151 questionnaires were rejected because a considerable number of questions were not answered. On the other hand, 129 usable questionnaires were collected. The total response rate was 46%. Responses were confidential, with limited access by the researcher only. Demographic information was collected from participants to indicate their gender, age, department and level of education. The majority of respondents were male (69%) and females accounted for 31%. Regarding age, 55% of respondents were between under 20 and 30 years, 31.8% were between 31 and 40, 13.2% were between 41 and over 50. For level of education, 73.6% indicated that they have completed a bachelor degree, 24% have a master's degree, 2.3% hold a PhD, and none chose 'Other'.

Table 3.2: Characteristics of respondents

Characteristics		Orange N=129	
Gender	Male	89	69%
	Female	40	31%
Department	HRM	25	19.4%
	Sales	55	42.6%
	R&D	26	20.2%
	Product development	23	17.8%
Age	Under 20 - 30	71	55%
	31 – 40	41	31.8%
	41 – Over 50	17	13.2%
Education	Bachelor's	95	73.6%
	Master's	31	24%
	PhD	3	2.3%
	Other	0	0%

3.8 SURVEY QUESTIONNAIRE MEASURING INSTRUMENTS

The questionnaire entailed a number of statements that were intended to measure employees' perceptions of the relationship between HRM practices and innovation in addition to internal drivers (organisational climate). The main indices covered the three main variables: HRM practices, organisational climate and product innovation. The construct of the scales used and how the instruments were adapted are described in the following sections. A number of scale items existed previously in similar studies and were inserted in the questionnaire to represent a number of variables in order to ensure appropriate scores for validity and reliability (Bryman, 2012; Gray, 2009).

Research on paper-based questionnaires (see, for example Kuo, 2011; Hair *et al.*, 2003; Dobni, 2008) suggests that the design will influence the response rate and participants' willingness to participate. Clarity of language was considered, and two-way translation was conducted as the questionnaire survey was translated into the Arabic language. Spacing between questions was also considered, to make the items clearer and to produce user-friendly scale items. The Likert scale, presented as a table with five columns, was designed to maximise willingness to participate, as well as simplifying the questionnaire.

The number of scale items was based on existing studies. Given the length of the questionnaire, and to maintain the advantages outlined above, it was decided that each practice of HRM, scale of innovation and internal driver be assessed using three to four items. In addition, some scale items were omitted as being too similar to other questions. The scale items were reviewed many times by the researcher and supervisor to guarantee clear and logical expression and contribution to the study aims.

3.8.1 Measuring Innovation Awareness and Commitment

Innovation was measured using a number of scale items from previous studies, with four main indices. The items that were inserted in the questionnaire survey to measure innovation are included in Appendix (2).

3.8.1.1 Innovation willingness items

The first scale representing innovation measured innovation willingness, with the scale items being adopted from a study by Dobni (2008). Dobni proposed a number of scale items to measure innovation propensity using a seven-point Likert scale (1=strongly disagree, 7=strongly agree). The items were designed to measure employees' potential and perception of innovation. A five-point Likert scale (1=strongly disagree, 5=strongly agree) was employed to make the questionnaire more consistent. Moreover, across all the statements in the questionnaire, a five-point Likert scale was adopted. This is in line with models in similar studies, such as Lepak and Snell's (2002) model to measure HRM practices and innovation and Kuo's (2011) model to measure organisational characteristics. In addition, using a five-point Likert scale instead of a seven-point scale was deemed to generate a user-friendly outlook for the questionnaire, making it easier for the reader, simpler and more useful, especially given the number of variables in this study.

Items measuring innovation willingness were adopted from a study by Dobni (2008). These items showed a satisfactory Cronbach's alpha score of 0.77 and most essentially they measure innovation with a focus on employees' beliefs and assumptions in the organisation. This seems to be very close to employees' awareness of and commitment to innovation and the extent to which the organisation is perceived to be engaged in innovation. Moreover,

the processes by which Dobni (2008) developed the scales and items had a multiple robust academic basis; Dobni first developed scales and items from existing research and studies that are profound in their findings and results (Wang and Ahmed, 2004; Christensen and Raynor, 2003; Dobni and Luffman, 2003), considering the innovation intention attitudes. After the scales were developed, the items were presented to a large number of employees to check the wording, clarity and meaning of each against the scales they were measuring. This additional step increased the accuracy of the items, which resulted in modification or deletion of some of the items. Having done that, Dobni then produced a final list of items that were checked carefully by employees, which this study then adopted. The items against innovation willingness and the rest of the innovation-dependent variables are presented in Appendix (2).

3.8.1.3 Radical vs incremental innovation items

The second scale for innovation measured the degree of newness in the new products. Radical vs incremental innovation was measured using existing scale items proposed by Lin (2007) to measure the ability to introduce new products and services by asking respondents about the degree of newness in the new innovations. Lin (2007) utilised a seven-point Likert scale (1=strongly disagree, 7=strongly agree).

The items adopted from Lin (2007) and Jansen *et al.*, (2006) measured employees' perceptions of innovation. Items adopted were statistically significant based on the factor analysis loadings (>0.50), additionally; Cronbach's alpha scores for these items were over 0.72. Jansen *et al.*, (2006) measured exploitative and explorative innovation using items that measured employees' tendency to innovate.

3.8.1.4 Origins of product innovation items

The third scale measuring innovation represents origins of innovation. This scale measures the adoption of open vs closed innovation. A number of existing scale items proposed by Dobni (2008) measure the origin of innovation in terms of idea sources, the use of external sources and the use of internal sources to promote innovation. Dobni (2008) used a seven-point

Likert scale (1=strongly disagree, 7=strongly agree) to capture the responses. In addition, two scale items were taken from existing scale items proposed by Jansen *et al.*, (2006), measuring whether innovation was inspired and driven by customer needs or organisational belief in innovation. Jansen *et al.*, (2006) used a seven-point Likert scale (1=strongly disagree, 7=strongly agree) to calculate responses. All the items adopted from Dobni (2008) and Jansen *et al.*, (2006) met the statistical limits and were even over the threshold for Cronbach's alpha. Additionally, the items were designed at the employee level, seeking to capture their commitment to innovation.

3.8.2 Measuring HRM Practices

As discussed in Chapter 2, existing studies of HRM practices and innovation have focused on a subset of HRM practices, although a considerable amount of HRM literature suggests that other HRM practices may potentially have a positive impact on innovation. The aim of this study is to investigate the role of a wider range of HRM practices in promoting innovation; therefore, a number of scale items and instruments were considered and inserted in this study from existing scale items developed by Lepak and Snell (2002) and Armstrong's (2011) *Handbook for Human Resource Management*.

Lepak and Snell (2002) studied the relationship between HRM practices and HR configuration (commitment-based, productivity-based, compliance-based and collaborative) and employment mode. They examined the characteristics of a number of practices (training, compensation and rewards, appraisal, and recruitment and selection) and employees' perception of these practices. For example, regarding training, they employed a number of scale items in an attempt to measure the nature and characteristics of training in their company, such as "training focuses on team building" and "training seeks to increase short-term productivity". Lepak and Snell (2002) utilised a five-point Likert scale (1=strongly disagree, 5=strongly agree) to capture participants' responses.

In this study, the respondents were asked about their perception and interpretation of HRM practices in the participating company. Accordingly, scale items measuring HRM practices used by Lepak and Snell (2002) were

modified to measure the perception of HRM practices from the employees' point of view, rather than from the organisational point of view as in Lepak and Snell's (2002) study.

Respondents in the questionnaire were asked to assess how they perceive and recognise HRM practices in their organisation and to characterise them. Also, scale items allowed respondents to state whether they are satisfied with the implemented HRM practices and the potential effect on their attitudes to product innovation. The scale items are designed to measure which HRM practices contribute to product innovation and to explore the attributes of HRM practices using indicators such as the importance of training, how appraisal is done, and recruitment and selection measures.

A number of previous empirical studies have used percentages or binary scales to measure HRM practices, although those using a Likert scale have yielded robust results (Delaney and Huselid, 1996; Lepak and Snell, 2002; Zhao *et al.*, 2012).

The measurement of the items and scales was conducted using a Likert scale. As the purpose of a Likert scale is to capture the measure of responses to questions and items reflected within these questions, it was important to allow for better layout of the questionnaire. In other words, a five-point Likert scale is likely to increase the participation rate and produce a participant-friendly questionnaire. More fundamentally, as the questionnaire contained a large number of practices and items, it was then on the mind of the researcher to generate a questionnaire that allowed as far as possible for a greater level of engagement and less confusion and frustration for participants. The large number of practices considered in this study could have been time-consuming and might have created frustration for participants; therefore, the choice of a Likert scale was essential in this respect. Previous studies on innovation, HRM and drivers of innovation have used a five-point Likert scale (see Shipton *et al.*, 2006; Lepak and Snell, 2002). Perceptions of HRM practices can be somewhat mixed; employees express different attitudes in terms of their perceptions of HRM practices to innovate. This research is mainly concerned with measuring these

perceptions, and thus a Likert scale that measures perceptions using an adequate range of answers within the Likert scale appears to be suitable. The researcher intended to provide a Likert scale that had the fundamental ability to capture perceptions of HRM practices; the most logical and appropriate Likert scale in this respect seems to be five, as scales of less than five seem to lack the ability to measure perceptions (strongly dis/agree and dis/agree with no neutral responses) and look like they are forcing respondents to choose responses of either disagreement or agreement. In order to allow for the ability to draw firm conclusions, a five-point scale is favourable; for instance, a seven-point Likert scale will include the option to answer 'somewhat disagree' / 'somewhat agree', which will not help in drawing out employees' perceptions of the HRM–innovation link or lead to robust conclusions. Rather, if the area of HRM–innovation has received intensive research attention and a plethora of studies then it is more appropriate to use a seven-point Likert scale to measure the degree of perception more sharply and precisely, which is not in the main radar of this research. Also, in order to allow for comparison with previous research, a five-point Likert scale is more constructive. In the light of the above discussion, therefore, in this study a five-point Likert scale (oscillating between 1=strongly disagree and 5=strongly agree) was used to calculate all these indices.

Lepak and Snell (2002) measured the role of training, recruitment, performance appraisal, and rewards and compensation, to study the effect of HRM and HR configuration on employment mode and the ability to perform tasks in a productive way, whether based on commitment and compliance or on collaboration. As this research is concerned with studying perceptions of the role of HRM practices in promoting innovation awareness and commitment, studies by Lepak and Snell (2002) and Armstrong (2011) seem to provide scales and measures for HRM practices that are close to the research aims and can answer the research questions. For instance, Lepak and Snell (2002) asked respondents, line managers and HR managers to assess their perception of the value of HRM practices, how intensive the use of certain HRM practices was, which HRM practices employees felt were more useful and allowed them to be productive, what kinds of jobs were

based on these practices, which HRM practices employees were performing, and what kinds of HRM practices their companies followed. These scales and items representing the scales can be used in this research, as their main logic is around perception of HRM practices. Moreover, scales and items by Lepak and Snell (2002) were used and adopted in similar studies looking at the impact and perception of HRM practices and the role of HRM practices in promoting innovation (see Cabrelas *et al.*, 2006) and led to robust findings. Lepak and Snell (2002) called for an HRM system or practices that result in internal development of HR, which appears to largely support and inspire this research. Additionally, the scales used by Lepak and Snell (2002) met, and for some scales exceeded, the satisfactory statistical limits of the reliability test (Cronbach's alpha) of over 0.80, which indicates a desirable consistency and a very good score for reliability of the scales and items. As no previous research known to the researcher has looked at broader HRM practices, Armstrong seems to offer the most comprehensive list of HRM practices available. Furthermore, in his *Handbook for Human Resource Management*, Armstrong (2011) proposes the value of the practices and what they should promote in order to support organisational functions and performance. Thus, HRM practices that were not covered by previous research or by Lepak and Snell (2002) were developed from Armstrong's *Handbook*. The study developed new scales based on Armstrong's list of practices as he produced a number of points under each practice that suggest what the practice is expected to offer to employees to support the functioning of the organisation. Yet, some of these practices are likely to differ when considering a cross-cultural transformation; that is, these practices are context limited and might not exist in the Jordanian context. An example of this is the practice of the "compressed work week", which was excluded from the study of the HRM–innovation link.

Lepak and Snell (2002) used a five-point Likert scale (1=strongly disagree, 5=strongly agree) to answer these questions. Appendix (1) contains the items used to represent HRM practices.

3.8.2.1 Training

Lepak and Snell (2002) used nine scale items to ask respondents about the nature and characteristics of training in their company, such as “training focuses on team building” and “training seeks to increase short-term productivity”.

Respondents in this research study were asked how they would describe training in their company using a number of indicators such as nature of training, value and goals of training, and perception and importance of training.

3.8.2.2 Recruitment

Lepak and Snell (2002) proposed nine scale items to measure the role of recruitment by asking respondents to describe the focus of the recruitment process and criteria for selecting and recruiting employees.

3.8.2.3 Appraisal

In their study, Lepak and Snell (2002) developed eleven items to measure the nature of performance appraisal, what appraisal focuses on and the basis on which it is constructed in terms of output and input.

3.8.2.4 Compensation and rewards

The compensation and rewards scale items were drawn from Lepak and Snell's instruments. The items were designed to measure the nature of compensation and rewards and determine on what basis compensation and rewards are offered.

3.8.2.5 Employee development

For employee development, job design and communication, scale items were developed based on Lepak and Snell's (2002) assessment of HR configuration and job characteristics. A number of scale items were developed based on existing items measured by Lepak and Snell (2002). Items proposed by Lepak and Snell (2002) assess the nature of tasks that employees perform and whether tasks involve self-development. In this study, a number of scale items assessed whether the nature of tasks that employees perform allows self-development and assessed the nature of the tasks.

3.8.2.6 Job design

The scale items were designed to measure the degree of autonomy, structure of the job, variety of tasks and nature of the job as follows:

3.8.2.7 Employee communication

The scale items were designed to assess whether there is communication between employees and line managers and to capture the nature of the two-way communication between employees and managers or supervisors.

As previous studies and literature failed to take a holistic view of the relationship between HRM practices and product innovation, scale items for the rest of the HRM practices were developed based on theoretical discussion and arguments. Specifically, a number of scales and items for HRM practices drew on the work of Armstrong (2011), who identified a number of policies and criteria for HRM practices. More fundamentally, the work of Armstrong clarified how to assess the practices within the organisations. The following scale items are developed based on the work of Armstrong (2011).

3.8.2.8 Absence management

A number of indicators were identified by Armstrong (2011), such as flexibility of work, stress at work, frequent job transfers, and reward procedures in the organisation.

3.8.2.9 Talent management

Scale items in this study measured the talent and creativity policy in the companies from the employees' perspective, based on Armstrong's (2011) indicators of talent management, which indicate whether the company pays attention to talented employees and allows them to develop their skills, creativity and problem-solving techniques.

3.8.2.10 Retention management

Items measured whether employees are satisfied with their jobs and working conditions and whether they are paid enough.

3.8.2.11 Work–life balance

Armstrong proposed some indicators to assess work–life balance in the company. Such indicators range from taking into account life outside work to the process of arranging working hours.

3.8.2.12 Job engagement

Armstrong's measures covered job satisfaction, freedom at work and cooperation with colleagues.

3.8.2.13 Recognition

Armstrong's indicators included recognising and rewarding employees' contributions, feedback based on performance, and grading decisions.

3.8.2.14 Health and safety at work

Scale items measured safety at work, compensation policy if any loss or damage takes place at work, and available procedures and guidelines for health and safety at work.

3.8.2.15 New technology

Armstrong's measures included introducing new technology to employees before launching and installing it, effects of using new technology and expected outcomes are explained and support to use the new technology is provided.

3.8.2.16 Redundancy

Indicators based on Armstrong's handbook included fair treatment for surplus employees, annual evaluation of the tasks that need to be done, and disruption to employees who have to leave.

3.8.2.17 Diversity management

Armstrong identified the role of recognition of the differences between employees and provision of opportunities to all employees without bias.

3.8.2.18 Email and use of the Internet

Armstrong's measurements assessed whether the use of the Internet and email is allowed, the way email and the Internet are used, and effective use of email and the Internet at work.

3.8.2.19 Grievances

These scales captured whether an employee can appeal regarding a complaint and whether the company will listen to employees regarding their grievances.

3.8.2.20 Employee voice

Armstrong's scale items assessed employees' relations with their managers and the discussion of employees' needs. Scale items measured whether employees are provided with the opportunity to discuss their needs and problems with their management and assessed the relationship between employees and line managers.

3.8.2.21 Equal opportunity

Armstrong assessed equal opportunity by considering equality of treatment of all employees regardless of sex, background, religion, race, marital status or disability. In this research study, a number of scale items were developed to measure equality between employees; whether they receive fair treatment in terms of payment, rewards and promotion; and, if discrimination arises, how the company deals with it.

3.8.2.22 Employee relations

Armstrong's indicators captured the relationship between employees, management and commitment practices by the company to develop levels of involvement with employees and organisational activities.

3.8.2.23 Discipline

Armstrong's indicators suggested that discipline should cover the assessment of whether employees know what is expected from them and whether the tasks they perform are well defined.

3.8.2.24 Promotion

Armstrong proposed a number of criteria and measures to provide guidelines for promotion policy.

3.8.2.25 Sharing information

Armstrong assessed information sharing in terms of team-working, flow of information among employees and communication between employees.

3.8.2.26 Consideration and respect

Armstrong's handbook represented consideration and respect in relation to employees being treated in a fair way as human beings, and managers showing interest in and respect for employees' concerns.

3.8.2.27 Employee security

Regarding employee security policy, Armstrong stated that employees will not readily be asked to leave their job. In addition, the nature of tasks that employees perform should be clear and well defined.

3.8.2.28 Motivation

Motivation policy aims to enhance employees' commitment to the organisation, improving their performance and building organisational citizenship relationship so tasks can be performed in a more efficient way.

3.8.3 Measuring Organisational Climate

Organisational climate was assessed based on four dimensions of the organisation, as discussed in Chapter 2: organisational performance, organisational structure, organisational knowledge and organisational culture. Organisational performance was measured by customer satisfaction and quality of products, organisational structure by flexibility and centralisation, organisational knowledge by knowledge acquisition and knowledge sharing, and organisational culture by an innovation culture and market culture. Scale items measuring organisational characteristics were adopted from existing measurements provided by previous studies and rated on a five-point Likert scale (1=strongly disagree, 5=strongly agree). A five-point Likert scale was utilised in order to make the questionnaire design more consistent, since items measuring HRM practices and innovation (which form the majority of the questionnaire items) are measured using a five-point Likert scale. In addition, some studies, as will be shown in the following subsections, used a five-point Likert scale to measure internal drivers (see, for example Kuo, 2011). Moreover, it is easier and simpler for participants to use a five-point Likert scale. Appendix (2) includes all the adopted items used in the questionnaire.

3.8.3.1 Organisational Performance

A number of scale items were developed from Delaney and Huselid's (1996) study, which measured employees' perception of organisational performance. Items were answered using a four-point Likert scale (1=worse, 4=much better). Also, two scale items were developed from Dobni (2008), who examined the role of organisational infrastructure and performance in enhancing and promoting innovation and used a seven-point Likert scale (1=strongly disagree, 7=strongly agree).

3.8.3.2 Organisational Structure

A number of scale items measuring the role of organisational structure were developed from a study by Jansen *et al.*, (2006), who explored the role of organisational antecedents in innovation. They conceived organisational structure in terms of centralisation, flexibility and formalisation. Jansen *et al.* (2006) measured the responses using a seven-point Likert scale (1=strongly disagree, 7=strongly agree).

3.8.3.3 Organisational Knowledge

Kuo (2011) developed a number of scale items to measure the impact of knowledge management capability, organisational performance and organisational innovation. Kuo (2011) operationalised a five-point Likert scale (1=strongly disagree, 5=strongly agree) to calculate responses.

3.8.3.4 Organisational Culture

Dobni (2008) proposed a number of scale items to measure organisational culture and its impact on innovation, including the intention to innovate, organisational infrastructure to support innovation, employee support for innovation through knowledge, and an environment that supports and promotes innovation among employees. Respondents were management members and operational-level employees. Dobni (2008) utilised a seven-point Likert scale to measure the responses (1=strongly disagree, 7=strongly agree).

3.9 SURVEY QUESTIONNAIRE: DATA COLLECTION PROCEDURE

The researcher conducted two follow-up phone calls with the contact person in Orange to offer any clarification needed for participants as well as asking if

the questionnaires had been completed by respondents. No respondents raised any ambiguous items in the questionnaire. The researcher did not receive any phone calls, messages or emails inquiring about any item or scale. The researcher was notified by the contact person following the completion of all the questionnaires by participants. Completed questionnaires were kept in the attached envelopes for each questionnaire survey. The researcher then collected the questionnaires and sealed responses from each department in a separate file. Data collection took place between July 2015 and August 2015. In total, 280 questionnaires were collected from the participants. Incomplete questionnaires and those from unengaged participants were excluded from any further analysis. To do so, the researcher checked all the returned questionnaires one by one, which resulted in a total of 129 usable questionnaires. Responses were from all participating departments: HRM, Sales, R&D and Product development departments. Completed questionnaires were collected by a contact person in Orange and then returned to the researcher.

3.10 SURVEY QUESTIONNAIRE: DATA ANALYSIS

Following data collection, the raw data was entered into an Excel sheet (Office 2010). The data was then transformed into SPSS (version 20). SPSS was used to analyse the data. The multiple regression technique was used to measure the relationship between HRM practices, organisational climate and innovation.

At first, the responses entailing demographic data response rate consisting of gender, age, department and level of education were summarised. Then descriptive statistics for each scale were presented, indicating mean, standard deviation, and responses ranging from strongly disagree to strongly agree. After that, internal scale reliability comprising Cronbach's alpha score and item-total correlation (ITC) were introduced. Problematic items that showed potential improvement for scale reliability and Cronbach's alpha scores were deleted. Subsequent to that, new descriptive scores for revised scales were calculated and inserted in a summary table. Pearson's correlation scores between HRM practices, organisational characteristics and innovation dependent variables were calculated and presented accordingly.

Finally, multiple regression analysis was conducted and significant variables to innovation dependent variables were identified.

3.11 DATA COLLECTION METHODS: PHASE TWO

The second phase of the research involved qualitative methods. Semi-structured interviews were conducted over the phone with senior managers and employees in Orange. Semi-structured interviews were conducted to clarify, explain and better understand the findings from the questionnaire survey. Country profile and industry for phase two were the same as phase one.

3.11.1 Study Population

The population for phase two of the research consisted of line managers and key personnel of the organisations that participated in phase one. In total, ten interviews were conducted; three senior managers and seven employees participated in the interviews. The rationale behind phase two was to get better insights and understanding into and explain the results from phase one. Senior managers and employees were the targeted population for phase two as they were expected to offer explanations and solutions for the findings from phase one. Insights into organisational attitudes and behaviours and belief in the value of HRM and innovation, along with feedback on the policies adopted, are offered by senior managers and employees. The interviews aimed at offering a qualitative perspective on and insights into the quantitative data collected beforehand and discussed in Chapter 4. A multi-method study can provide the researcher with the ability to converge and merge quantitative and qualitative data, in order to arrive at a more comprehensive understanding and conclusion that can explain the research problem (Creswell, 2014). Conducting a quantitative research and analysing the results, and then building on these results to explain and clarify them using qualitative research, is referred to as being 'explanatory sequential' (Creswell, 2014), in which the obtained qualitative data seeks to explain quantitative data results.

3.11.2 Sample Selection

Jordan's telecommunications industry, as mentioned earlier, consists of three main organisations. Nevertheless, only Orange was targeted for the interviews where the sample selection was made. Potential participants within Orange were first identified following a phone call with the contact person assigned to the questionnaire survey in phase one. Following this, Orange approved to participate and contact details of senior managers and employees were provided. Each identified participant was emailed a letter highlighting the purpose of the interviews and benefits of participating.

3.11.3 Semi-Structured Interviews: Respondents

The potential participating organisation was consistent with stage one of the research, where participants were drawn from the telecommunications industry and specifically from Orange. Therefore, the same organisation who participated in stage one was then approached for the interviews. First, Orange was approached by asking their permission to participate and conduct interviews with some managers and employees. Following their approval, Orange was asked to provide contact details for key personnel and line managers. The rationale behind including senior managers and employees in phase two is that in the light of the survey results and findings, it was felt that senior staff in Orange would be able to provide a stronger, better understanding and the most complete picture of the issues identified and explain the results in phase one. In addition, through interviews employees could explain their perceptions of the HRM practices and innovation in their organisation. Therefore, it was expected that senior managers and employees would provide a better understanding and clarification of issues regarding HRM and innovation as they are more likely to be involved in drawing up policies and identifying challenges and interactions relevant to HRM and innovation in their organisations. HRM practices are perceived by employees in a distinctive way than the original HRM practices planned by the management. This is widely stated in the HRM literature (Boxall and Purcell, 2003). Managers design and implement specific HRM practices called intended HRM, which are then called perceived HRM based on employees' understanding and expectations

(Wright and Nishii, 2004). This interaction or gap between management intentional HRM practices to adopt some practices when received by employees the perception might differ. Therefore, senior managers' contribution in offering explanations and demonstrating what they designed the practices for and how employees perceive them is vital for this research. Thus, the departmental line managers who participated in phase one were interviewed on their willingness.

In addition to line managers, a number of employees were interviewed. A total of seven interviews were undertaken with employees. Employees' participation in the interviews is essential; they offer explanations and wider meanings of the results than phase one could obtain. For instance, they are able to explain why certain practices are valuable for them.

The senior managers were heads of the HRM, Sales and R&D departments. Employees were from HRM, Sales, R&D and Product development departments. In total, two employees from each department participated, apart from the Product development department, only one of whose employees was interviewed. Participation was on a voluntary basis. Interviews were conducted over the phone. Issues regarding confidentiality and anonymity were stressed and made clear to potential participants following their consent to participate. In addition, participants were reminded of the assurance of confidentiality and anonymity prior to each interview. Phone interviews with managers were conducted in March 2016. In total, three interviews (two male, one female) were conducted, and interviews with employees were conducted in July 2017.

3.12 SEMI-STRUCTURED INTERVIEWS: INSTRUMENT

The main purpose of the second stage of the research was to clarify, explain and shed some light on the findings of the questionnaire survey. Below is the content outline and structure of the interviews. Interviews were conducted over the phone. All the interviewed managers were asked the same questions. For employees, the interviews were somewhat similar to the ones conducted with their managers; however, there was a slight difference in the structure of the interviews. Employees were asked at the beginning about their contribution to innovation and how they perceive their role in this regard,

whereas managers were asked about the value of HR. This was because the results from phase one showed perceived HRM practices from employees and there was no need to replicate this with employees as to what they think of HR in phase two. However, employees were asked later, during the interviews, how they perceived HRM practices and the value of these practices.

The flow of questions was the same for each interview. Each interview commenced with the researcher thanking the interviewee for his/her willingness to take time to participate and be interviewed. Each interviewee was then asked about his/her department and job title. The content of the interview questions was derived from the research aims, questionnaire survey aims, research questions and guidance from the supervisor. Appendices (3 and 5) present the interview questions. The interview questions were arranged in the customary way for semi-structured interviews, with each main dimension starting with a leading question followed by a number of sub-questions. Six main dimensions were measured in the interview questions with managers, and four dimensions while interviewing employees. This variation in dimensions was due to the nature of the questions asked, as highlighted above.

When interviewing managers, the first dimension was HR and HRM. This main question and its sub-questions aimed to capture managers' perceptions and views on HR, HRM and HRM practices. The adoption of bundled or single practices was considered in this question. The second dimension concerned innovation and its importance for the organisation. Organisational beliefs and views on the importance of innovation were covered in this question. The organisational approach to innovation was considered; the adoption of open innovation or closed innovation approaches was covered in this dimension. The question also explored the issues of market pull and technology push approaches to innovation. The third dimension considered the relationship between HRM and innovation. Subsequently, the interview consisted of a number of sub-questions designed to increase understanding of the value of HRM practices to innovation and to identify which practices managers believe are relevant to innovation. The organisational approach to

identifying these practices was considered in this dimension. The fourth dimension addressed organisational climate. Managerial conceptualisations of organisational climate in relation to value creation and innovation were questioned. The fifth dimension concerned HRM practices and organisational characteristics. This question was designed to identify the most relevant factors for innovation in terms of HRM practices or organisational climate. In addition, a number of sub-questions were asked in order to explore whether there is a relationship between HRM practices and organisational characteristics. The sixth and last dimension looked at the promoters (enablers) of and barriers to innovation, HRM and organisational characteristics. Some examples of questions asked in the interviews are as follows: *“To what extent do you think HR is important for your organisation?”*, *“How do you draw up HRM practices that are needed for innovation? Based on innovation ideas? Market technology effects? Departmental roles?”*, *“What does your company do to promote innovation?”*. Throughout the interviews, participants were encouraged to provide a broad range of useful explanations and answers.

For employees, the first dimension was about innovation. It is a key question given the nature of the research aims and questions. It addressed their perceptions of their involvement in innovation and the approach to innovation. The second dimension concerned HRM and innovation. This reflects RQ1, and it sought to understand which HRM practices employees perceive as promoting innovation and the value of these practices. The third dimension looked at organisational climate, and it questioned employees on how they perceive organisational climate to support innovation and whether the tasks they perform are supported by HRM or organisational climate. The fourth and last dimension focused on the promoters of and barriers to HRM, innovation and organisational climate.

The results of the interviews are presented in detail in Chapter 5.

3.13 SEMI-STRUCTURED INTERVIEWS: DATA COLLECTION PROCEDURES

The original interview questions were translated from English to Arabic. The interviews themselves were conducted in Arabic, in order to ensure high

levels of participation and understanding by the respondents. A back-translation technique was used to ensure and maintain the consistent logic and meaning of the original questions. Prior to conducting the interviews, the back-translation technique was initiated by a specialist in Arabic and English. No major issues were noticed during or after the back-translation. Each interview commenced by explaining the nature and objectives of the discussion. The respondents were assured that all of their responses would be treated confidentially and anonymously. Each interview lasted approximately 45 minutes.

All the interviews with managers at Orange were conducted over the phone during early March 2016, and July 2017 with employees. In total, three interviews were conducted with senior managers and seven with employees. Prior to each interview the researcher reminded the participant that the interview would be recorded and an audio recording would be produced. During the interviews, interruptions by the interviewer were kept to a minimum and participants were left to speak as long as they could until they felt they had provided sufficient answers to the questions.

In addition, interviewees were notified that a written copy of the interviews, known as the transcription of the interviews, would be produced. Recording interviews is highly recommended: Robson (2002) proposed that “whenever feasible, interviews should be audio taped” (p. 289), this allows the researcher to maintain high levels of concentration and extract valuable responses. In addition, recording the interviews minimises the opportunity of misinterpretation and misunderstanding. Following the transcription of the interviews, participants were asked to read the transcripts to see if they were happy with and approved the content. This was done to ensure higher levels of credibility and confidentiality. Each interview was given a code, on the audio copy and in the transcription.

3.14 SEMI-STRUCTURED INTERVIEWS: DATA ANALYSIS

Following data collection, each interview was transcribed on paper. This was done in order to generate meaningful ideas and conclusions for each

question. The process of transcription took approximately two hours for each interview.

The data was analysed using the content analysis technique. Content analysis is regarded as one of the widely recognised techniques for qualitative studies that interpret the meanings and concepts of the interviews (Schreier, 2012). Qualitative content analysis is a tool that aims to map out key ideas and concepts for each research question (Creswell, 2006). Additionally, content analysis provides the opportunity to organise the structural properties of the textual materials (Creswell, 2003; 2009; Thomas, 2004). As mentioned above, the technique adopted to analyse and draw a number of main findings from the interviewees was the 'content analysis' technique, under which template analysis was initialised in this research. Template analysis is the most widely used approach to text-related data content (Creswell, 2014; Bryman, 2006), as it offers the ability to interpret, manage and summarise the meanings of the qualitative content of text data (Creswell, 2014).

With template analysis, the transcribed texts were thoroughly read and the main ideas and themes identified following each interview (Bryman, 2006). Each interview was read in depth many times, following which a number of emerging themes and patterns were identified. This technique is commonly recognised and followed in qualitative research to generate and identify themes related to questioned phenomena (Bryman, 2006). In addition, a number of consistent patterns were identified based on their answer frequency and the numbers of times they were mentioned by different interviewees. This process led to establishing codes that will be discussed in more detail in the following sections (Creswell, 2014; Bryman, 2006).

Due to the small number of the interviews conducted, no designated software such as Nvivo was used. Instead, the researcher implemented a thorough conceptualisation of the main impressions and an in-depth reading of texts and statements within the transcribed copies and concepts generated from the answers. This process resulted in identifying a number of codes for analysis. The codes generated were mainly related to HRM, organisational

climate and innovation, covering conceptualisations of HR, practices adopted, approaches to innovation, practices that the organisation routinely implements and practices adopted to promote innovation based on the perceptions of each manager and employee. The role of organisational climate and their relationship with innovation was also considered and contained in the concepts.

3.15 ETHICAL CONSIDERATIONS

An information sheet was sent to Orange, along with a copy of the questionnaire. In addition, informed consent was requested in the information sheet. Likewise, for phase two, an information sheet and informed consent were obtained prior to conducting the interviews. There was no potential for physical or psychological harm to participants before, during or after data collection and the completion of both phases of the research. Nor did the research raise any issues of personal safety for the researcher or participants as phase one was conducted in the home country of the researcher, where he is familiar with the system, language and lifestyle. The survey was distributed to the headquarters of Orange, which is located in Amman, the capital of Jordan. Jordan is a very safe and secure country and no risk was likely to occur during either phase of this research. For phase two, interviews were conducted via the phone. Therefore, no threats to personal safety were likely. The research did not actively engage with participants who had mental health problems or learning disabilities or with children under 18. This was ensured by requesting Orange to suggest suitable participants since including participants with mental health problems, learning disabilities, a terminal illness or children under 18 will not help in measuring innovation awareness in participants. Moreover, participation in both phases was on a voluntary basis. To prevent overexposure to similar studies, participants were asked on the informed consent form if they were happy to take part in the research.

Issues relating to confidentiality and anonymity were highlighted and confirmed. Orange was made aware that the research was for purely academic purposes with no other use of the data, and that, moreover, access to data would be limited to the researcher and supervisor for analysis

purposes. Orange was also informed that after collection data would be kept in a secure strongbox in the researcher's home. No names or personal information were asked for in the questionnaire except for age, gender, department and level of education. Also, no contact details were asked for in the questionnaire. The benefits of participating in the research were also mentioned.

Issues regarding confidentiality and anonymity were mentioned and stressed again on the cover page of each questionnaire. Both anonymity and confidentiality were maintained during the distribution of the questionnaire and afterwards. In terms of anonymity, the only personal data participants were asked for in the questionnaire was gender, department, age and level of education; no other personal data, such as names or contact details, was asked for. Also, Orange was given a code, and all responses to all questions were given specific codes in alphabetical-numerical (alphanumeric) order; for instance, A1 is questionnaire number one. Additionally, the researcher distributed and collected the data himself and conducted the data entry as well.

In terms of confidentiality, a soft copy of the data (a spreadsheet) was kept securely in a password-protected file on a memory stick, in a PC file with password protection and in the researcher's personal email account, with access to the data strictly limited to the researcher and supervisors. Also, hard copies of the questionnaires after data collection were kept in a secure safe box. Data from Orange was stored in a separate box and was kept in a strongbox with a security code at the researcher's home. Participants were provided with the option to receive feedback if they wished by providing their email address on a separate sheet using a box in place of work. Feedback will be provided on request as a discussion of the main findings in the company.

In phase two of the research, the same company participated as in phase one. Semi-structured interviews were conducted over the phone. Managers were made aware that the phone interviews would be recorded and also kept in paper form following the transcription of each interview. Interviews were conducted in the Arabic language. The same technique of two-way

translation used in translating the survey was applied to the translation of the interview questions. Assurances of confidentiality and anonymity were given to participants. No names or personal information were asked for or written down in the research. Only the researcher and supervisors had access to the data or to participants' personal details, which were in any case limited to their gender, years of experience, department and level of education and were at the same time anonymous. In this research, no names of participants were included in the interview script, to guarantee the highest level of confidentiality and anonymity. Confidentiality was maintained in this research because the identity of Orange and the data collected were kept securely as a soft copy (a spreadsheet) and coded appropriately. The safeguarding and securing of the recorded electronic audio versions of the data was achieved through coding, storing and limiting access to the data. Each interview was given a code and a password-protected file and saved separately in the researcher's own PC with access limited to the researcher and supervisors only. For the written copies, responses were kept in a password-protected strongbox at the researcher's home with access limited to the researcher and supervisors only. Additionally, no other organisation was allowed to access the responses of Orange. Also, participants were informed that the purpose of this research is purely academic. Limited access to the data obtained was ensured by allowing only the researcher and the supervisor access. Each interview was saved and coded using a number. Participants were informed that they could request a summary report if they wished by providing their email addresses and that the summary report would also be provided to participating companies. No names, department names or other personal details were provided in the feedback. Feedback will be provided on request as a discussion of the main findings in the company as there is little awareness and attention to specific HRM practices.

Only the researcher was involved in the analysis processes for phases one and two. Neither phase included any names or personal information. Only the demographic information highlighted above was summarised. In the interview analysis, the words 'informant', 'manager' and 'participants' were used on some occasions to increase levels of confidentiality and anonymity.

Prior to data collection, the survey and interviews underwent an ethical review process; nonetheless, there may be areas of concern and issues that need to be considered from an ethical perspective. This research is not completely anonymous. Participating company agreed to be mentioned by name and by department. However, it was stressed that no names of managers would be noted in the thesis. Therefore, the names of managers were not mentioned, but each quotation in the interview analysis and discussion in Chapter 5 was attributed to 'the manager of [name of the department]'. Based on the information about Orange and the titles of managers provided, it would be possible to identify specific managers. This is a concern that the researcher is aware of; however, the researcher raised this issue with interviewees and they reviewed the transcripts and were happy with them. Additionally, none of the comments themselves are likely to be detrimental or problematic to the participating individuals as they have been reviewed and the researcher is confident that the statements do not pose any risk of harm.

3.16 CHAPTER SUMMARY

This chapter described the research methodology and data collection. It addressed the philosophical position of the researcher, which is pragmatic pluralism, leading to deductive and inductive approaches.

The research need was revisited and linked to the choice of methods, techniques and methodology. The research aims and questions were discussed and a number of hypotheses developed. The chapter then pointed towards the use of quantitative and qualitative methods and justified the choice of research strategy.

The chapter then described how the research consists of two main stages. The first stage involves a quantitative survey questionnaire, and the second stage consisted of semi-structured interviews to collect data.

The choice of country and industry were next introduced and explained. The research was conducted in Jordan, the researcher's home country, and the participant company is in the telecommunications industry. The choice of sample size and the participants was explained. For the first phase of the

research, the total number of respondents was 280, of which 129 usable questionnaires were identified. The second phase involved ten participants: three senior managers, and seven employees.

The research instruments for both the survey questionnaire and the semi-structured interviews were discussed. Data analysis methods for each stage were described; multiple regression analysis was used to test the relationship between the dependent variable (innovation) and the independent variables (HRM practices) and organisational climate for the first stage, and content analysis for the semi-structured interviews was presented.

CHAPTER 4

QUANTITATIVE DATA ANALYSES AND RESULTS

4.1 INTRODUCTION

The aim of this chapter is to present the statistical analyses and results of the data collected using the survey questionnaire. The chapter provides quantitative data from respondents using the HRM-innovation questionnaire, in order to acquire a sense of the collected data in terms of identifying forms of relationships and the nature of these relationships through statistical tests for correlation and multiple regression. Prior to that, a number of tests are presented and discussed, which provide scores for the direction and value of responses and the reliability of the scales. Essential measures for items and frequencies in terms of scores for mean, median and standard deviation, along with frequency results for each item, are presented in Appendix (7). Similarly, results for item analysis, reliability analyses, item-total correlation and Cronbach's alpha analyses are included in Appendix (7).

The chapter consists of the following sections. First, Section 4.2 presents the survey questionnaire's respondent characteristics, summarising gender, department, age group and level of education. The chapter then presents the outcome of the exploratory factor analysis in Section 4.3, along with the new scales emerging from the test. Next, descriptive results of the new scales are presented in Section 4.4, following which Section 4.5 examines the main effects of the respondents' characteristics on the dependent variables. Prior to conducting multiple regression, a test of relationships between the dependent variables of HRM and organisational characteristics with dependent variables of innovation is introduced and discussed in Section 4.6. A multiple regression test is conducted, and results are offered in Section 4.7. The chapter then proceeds to discuss the results of the multiple regression analyses (see Section 4.8), before concluding with a summary section (Section 4.9) illustrating the main contents and findings.

4.2 SURVEY QUESTIONNAIRE RESPONDENTS

The survey questionnaire was distributed to employees in the telecommunications industry, as discussed in Section 3.8.3. Participants were employees within HRM, sales, R&D and product development departments. Demographic details regarding gender, age, department and level of education are summarised in Table 4.1. All responses were treated confidentially. In total, 280 questionnaires were originally distributed to participants in HRM, sales, R&D and product development departments. In response to this, 129 usable questionnaire responses were collected. The total response rate was 46%. The respondent sample consisted of 89 (69%) males and 40 (31%) females. By department, 80 (62%) were from HRM/sales departments and 49 (38%) were from R&D/product development departments. Regarding age, 71 (55%) were between under 20 and 30, 41 (31.8%) were between 31 and 40, 17 (13.2%) were between 41 and over 50. The majority of the respondents hold a Bachelor's degree (95; 73.6%), 31 (24%) have completed a Master's degree and three (2.3%) have a PhD.

Table 4.1: Respondents' characteristics

Characteristics		Orange N=129	
Gender	Male	89	69%
	Female	40	31%
Department	HRM	25	19.4%
	Sales	55	42.6%
	R&D	26	20.2%
	Product development	23	17.8%
Age	Under 20 - 30	71	55%
	31 – 40	41	31.8%
	41 – Over 50	17	13.2%
Education	Bachelor's	95	73.6%
	Master's	31	24%
	PhD	3	2.3%
	Other	0	0%

4.3 EXPLORATORY FACTOR ANALYSIS

Exploratory factor analysis is a technique used in quantitative analysis and is broadly regarded as a data reduction technique. Using principal component analysis, exploratory factor analysis was conducted on the total number of items (128 items). The fundamental logic behind running factor analysis, apart from being a data reduction tool, is to find whether latent constructs exist that underpin the scale variables and are relatively independent of each other (Tabachnick and Fidell 1996; Hair et al., 2014). A number of linear combinations of factors representing variables are produced that are able to summarise correlation patterns independently between the variables. A typical factor (variable) should carry a number of items that hold the same logic; any item for which its logic is odd or inconsistent with the rest of the items that are loaded on the factor (variable) can then be deleted. This is done to make sure that all the items embrace the same meaning and are able to represent robust scales (new variables). The reproduced variables (a smaller number of items and variables compared to the total number of items and variables prior to running the exploratory factor analysis) are expected to show more confident scores of reliability than for the individual observed variables (Tabachnick and Fidell 1996; Hair et al., 2014).

When running the exploratory factor analysis, the initial (non-rotated) solution identified 24 factors with eigenvalues over (1.00), thereby explaining 73.2% of the variance. For the first initial solution, some items were cross-loading significantly on multiple factors, and so they were deleted. However, even with the deletion of these items, the initial solution did not suggest or offer any useful variables that were identifiable. Following this result, the researcher tried a solution between 4 to 8 factor structure, and the solution of 5 factor structure with eigenvalue over 1.00, as shown in Table 4.2 below, was the most appropriate, as it was able to identify a number of factors with no significant cross-loading and meaningful items that could successfully produce acceptable variables.

Table 4.2: Five-Factor Solution using Varimax Rotation

Factor	Eigenvalue	Variance Explained (%)	Cumulative Variance (%)
1	17.063	35.549	35.549
2	3.769	7.851	43.400
3	2.715	5.656	49.056
4	2.286	4.763	53.819
5	1.891	3.940	57.760

In light of the above discussion, and based on Tabachnick and Fidell's (1996) suggestion, an alternative strategy was adopted. According to Tabachnick and Fidell (1996), an appropriate way to proceed, if factor structure estimators fail to suggest suitable structures, is that the researcher can then examine a number of alternative structure solutions. This was the case here, in that the factor analysis identified inclusive and unsuitable factor structures, and so the researcher followed an alternative structure solution by examining the solutions of four to eight factor structures as mentioned above.

In addition, this suggestion is particularly useful for this research, as the exploration of new instruments and a number of inappropriate items may be incomprehensible and obscure the hypothesised structure. Therefore, it was decided that several potential factor solutions (and likely more complex) would be produced and generated, in order to examine what patterns might emerge.

Solutions suggested that a five-factor solution with an eigenvalue over (1.00) is the most appropriate solution, due to its ability to identify consistent factors (variables) with items carrying the same information about certain HRM practices. In addition, the five-factor solution provides the simplest explanation of the facts and datasets, as suggested by Kline (1994, p. 64), who stated that the "solution selected should be the one which provides the simplest explanation of the facts". The constructive offerings that are obtainable by the five-factor solution support the nature of the factor analysis in terms of acquiring a simple structure of the data and variables. Table 4.3 shows the outcome of the five-factor solution using varimax rotation. Factors 1, 2, 3, 4 and 5 had eigenvalues of 17.063, 3.768, 2.715, 2.286 and 1.891, respectively. Together, these factors count for 57.8% of the variance in the

dataset. The table includes the item number and wording. No significant cross-loading occurred between items across the five factors. A value for salient loading was considered for 0.32 (Tabachnick and Fidell, 1996). Loadings of 0.32 and above are shown in bold. Following the elimination of the items that failed to load, or loaded inappropriately, we have 48 items loaded onto the five factors. Twelve items loaded significantly onto Factor 1. These were items from training (three items), recruitment (four items), performance appraisal (two items) and job design (three items). For Factor 2, six items loaded significantly, namely discipline (three items) and sharing information (three items). Ten items loaded significantly under Factor 3 as follows: retention management (one item), health and safety (three items), equal opportunity (three items) and employee security (three items). Moving to Factor 4, a total number of 14 items loaded significantly: employee communication (three items), retention management (two items), grievances (three items), employee relations (three items) and consideration and respect (three items). The loadings for Factor 5 consisted of six items, namely organisational culture (three items) and organisational performance (three items).

Following the outcome of the factor analysis, it is encouraging to redefine and identify new scale instruments. Factor 1 contained items from the high-performance work practice systems (such as training and recruitment). The items are summarised above for each factor. Therefore, Factor 1 was labelled as “HPWs”. Considering the items loaded onto Factor 2, they seemed to hold latent constructs of employee engagement, and thus it was labelled “Expectations and information sharing”. In relation to the third factor, the loaded items held measures that are relative to HRM hygiene factors; therefore, Factor 3 was labelled “Hygiene factors”. Factor 4 consisted of items revolving around motivation and constructive communication, so the “Motivation and communication” label was given to this factor. The fifth factor contained items measuring organisational characteristics; and so it was labelled “Organisational Climate”. Table 4.3 summarises these factors (new variables) and their labels.

Table 4.3: Five-Factor Solution Outcome

		Component			
	1	2	3	4	5
Training1	.450	.105			
Training2	.482	.216			
Training3	.538				
Recruitmen1	.391				
Recruitmen2	.488			.258	
Recruitmen3	.623				
Recruitmen4	.538				
Appraisal2	.497			.097	
Appraisal3	.646	.012			
JobDesign1	.507		.204		
JobDesign2	.623		.122		
JobDesign3	.757				
EmployeeCommunication1				.687	
EmployeeCommunication2			.115	.579	
EmployeeCommunication3				.573	
RetentionManagement1	.160			.470	
RetentionManagement3	.275	.288		.575	
RetentionManagement4			.706		
HealthandSafety1		.167	.645		
HealthandSafety2	.221	.110	.710		
HealthandSafety3	.073		.573		
Grievances1		.170		.670	
Grievances2		.017	.217	.717	
Grievances3		.043		.643	
EqualOpportunity1	.014		.528		
EqualOpportunity2			.756		
EqualOpportunity3			.679	.170	
EmployeeRelations1				.488	
EmployeeRelations2	.154	.007	.118	.518	
EmployeeRelations3	.277	.293	.144	.577	
Discipline1	.026	.507	.207	.143	
Discipline2	.122	.622			
Discipline3		.694			
SharingInformation1		.739	.239		
SharingInformation2	.047	.599		.199	
SharingInformation3	.132	.632			
ConsiderationRespect1	.131			.631	
ConsiderationRespect2	.259	.059		.559	
ConsiderationRespect3		.087		.687	

EmployeeSecurity1	.055		.641		
EmployeeSecurity2	.190		.408		
EmployeeSecurity4	.258	.042	.542		
OrganisationalCulture2	.134				.434
OrganisationalCulture3	.297	.026			.526
OrganisationalCulture4	.119			.163	.589
OrganisationalPerformance1			.084		.690
OrganisationalPerformance3	.243	.111	.216		.543
OrganisationalPerformance4					.508

For the dependent variables, the researcher followed the same criteria considered for the independent variables (with an eigenvalue over 1.00) as the first attempt identified five factors with high cross-loading and multifaceted identification of the logic of the items; therefore, in order to find a useful solution, attempts between two and four factors were initiated, following which a two-factor structure was deemed the most appropriate and useful solution. The output of the factor analysis is shown in Table 4.4. The two factors (new variables) were labelled “Origins of innovation” and “Radical vs incremental innovation”.

Table 4.4: Factor analysis for the dependent variables: innovation willingness, origins of innovation and radical vs incremental innovation.

	Component	
	1	2
InnovationWillingness1	.277	.644
InnovationWillingness2	.455	
InnovationWillingness3	.342	.071
RadicalvsIncrementalInno1	.110	.810
RadicalvsIncrementalInno2	.236	.336
RadicalvsIncrementalInno3	.077	.477
RadicalvsIncrementalInno4	.249	.349
OriginsofInno1	.616	.131
OriginsofInno2	.662	.162
OriginsofInno3	.670	.070
OriginsofInno4	.446	.246
OriginsofInno5	.369	-.269
OriginsofInno6	.597	

On the basis of the factor analysis, using principal component analysis, the outputs produce new scales and variables, as illustrated earlier in Table 4.2 above. Table 4.5 below highlights the labelling of the new variables. The new scales were labelled based on the logic of the items loaded under each factor, as discussed earlier. A Cronbach's alpha and item-total correlation for the items under each scale were conducted, to acquire scales that would be statistically acceptable and robust, before running correlation and regression analyses.

Table 4.5: Factor (new variables) labelling

Factor No.	Label
1	HPWs
2	Expectations and Information Sharing
3	Hygiene Factors
4	Motivation and Communication
5	Organisational Climate

A number of items were removed for some scales. Excluded items did not have the same logic or meaning as other items in the same scale. Alternatively, if an item was deleted, this indicated an improved Cronbach's alpha and item-total correlation scores. For HPWs, items for training (1), and appraisals (1), were deleted, due to their negative influence on the Cronbach's alpha and ITC scores. Alpha if item deleted suggests after removing these two items, reliability score will be improved. The new scores for Cronbach's alpha and ITC are presented in Table 4.6. Item discipline (3) was removed from expectations and information sharing to improve reliability scores. In respect to hygienic factors, equal opportunity (3) was removed, due to being irrational and inconsistent with the rest of the items included in this scale. Equal opportunity (3) measures whether indirect discrimination takes place, whether intentionally or not, whereby a condition is applied that adversely affects a considerable proportion of people based on their race, religion, colour, etc., which does not help build the scale logically. An item measuring the perceptions of salary reviews was removed from the motivation and communication scale. Item (employee relations 3) was deleted for being too distant from measuring motivation and communication.

In relation to organisational climate, item (organisational performance 2) was removed, in order to enhance the reliability score of the scale.

For the dependent variables, four items were removed from the origins of innovation scale. Initially, eight items made up this scale; yet, in order to obtain adequate scores for Cronbach's alpha and ITC, four items were discarded, namely innovation willingness (2 and 3) and origins of innovation (5 and 6). The second scale for dependent variables is radical vs incremental innovation. Originally, five items contributed to the scale. However, in order to maintain desirable scores for Cronbach's alpha and ITC, the item radical innovation (3) was deleted. Scores for Cronbach's alpha and item-total correlation for all items under each scale, along with problematic items that were deleted, are included in Appendix (8).

4.4 SCALES CONSTRUCTS:

This section presents the constructs of the scales that emerged from factor analysis. It describes the items related to each scale and then demonstrates how these items represent the scales.

4.4.1 HPWs Scale:

This scale consisted of a cluster of items. The first three items are training variables (1, 2 and 3). The first item represents the extent to which employees perceive training to develop specific skills and knowledge in the organisation. The second item relates to perceptions of the training required to support task performance. The third item is about whether employees perceive training as continuous in their organisation. In addition to these training variable items, four recruitment variables (1, 2, 3, and 4) contributed to the construction of the HPWs scale. The first of these measures the extent to which employees perceive the recruitment process in their organisation to follow an approach that is not limited to a single method, such as interviews only. The second item relates to screening potential candidates for a job over various stages prior to offering them a job, in the form of competition between candidates on different skills or abilities. The third recruitment item is about the organisation's selection process strategy: whether the selection of candidates focuses on who contributes best to the organisational objectives

and goals. The fourth recruitment item focuses on describing recruitment processes as focusing on the skills, knowledge and experience of applicants or potential employees. The third set of variables that constructs the HPWs scale is performance appraisal. Two items (2 and 3) of performance appraisal form part of the HPWs scale. One of these measures appraisal as being perceived as focused on the quality of efforts and outputs. The other item seeks to measure perceptions that appraisals are conducted on the basis of quantifiable and objective results. There are also three job design variable items (1, 2, and 3). The first is related to employees' perceptions that jobs are designed based on their skills. The second item represents the degree of autonomy when performing tasks. The last item measures employees' perceptions that they perform a wide variety of tasks.

All these items together represent aspects of best practice approaches that allow organisations to develop employees' skills, performance, knowledge and abilities, which are central to HPWs. Furthermore, the items that formed the HPWs scale were derived from HRM practices that are broadly identified in the HRM literature as elements of HPWs (Boxall and Purcell, 2003; Wright, 2001).

4.4.2 Expectations and Information Sharing Scale:

The expectations and information sharing scale consisted of five items. These items were as follows. The first relates to employees' perceptions of whether the job they perform is clear and well defined to them. The second is an item measuring employees' perceptions regarding the knowing their job that is expected from them to do. Employee perceptions of the sharing of information at their workplace are also measured in this scale. A further item represents the extent to which employees share and seek information when performing tasks. The last item measures perceptions of the jobs as if they require sharing of information. All these items together hold the logic and meaning of sharing of information and the expectations of jobs performed. They represent the extent to which employees perceive the flow of information sharing and expectations of clear regulations, which can facilitate the sharing of information in their workplace.

4.4.3 Hygiene Factors Scale:

The HRM hygiene factors scale consisted of nine factors. The items were as follows. One item measures the degree to which working conditions in the organisation are perceived as being good. The next item seeks to capture employees' perceptions of the extent to which they have introduced to health and safety procedures at work. Another item concerns the prioritisation of safety in the workplace. One item relates to perceptions of compensation for damage or harm that occurs at work. The extent to which employees perceive their workplace as having people from different backgrounds is also measured. Perceptions of the availability of rewards, promotion and training to all employees regardless of their background is measured as well. Performing jobs that entails high levels of job security and the extent to which employees think their job is secure is an item under this scale. An item measuring the characteristics of the jobs employees perform and perceive as standardised throughout the industry is included. Collectively, these items represent the hygiene factors of HRM. They address elements of health and safety and job security in the workplace, which are central to the constitution of hygiene factors as proposed by Herzberg (1959; 2003).

4.4.4 Motivation and Communication Scale:

A number of items formed the motivation and communication scale. The following items represent the scale. One item measures the extent to which employees can communicate with their supervisors when facing challenges. Another item concerns perceptions of good relations with colleagues in the workplace. One item is about whether employees like working in their organisation. Employees' perceptions of their ability to discuss grievances also contributes to the construction of this scale. Employees' perceptions of their ability to appeal to a more senior manager if they are not happy with decisions made by their manager is measured. The availability and use of communication to solve any conflicts between employees or with their managers is also measured. An item measuring employees' perceptions of consideration and respect as increasing their potential to introduce new ideas is part of this scale. The scale also contains an item to measure employees' perceptions of workplace procedures as increasing levels of satisfaction. The

last item in this scale is about employees' perceptions in relation to management considering their needs before taking decisions. Jointly, these items represent how employees perceive motivation and communication in their organisation. The items concern to a great extent factors related to motivation as represented by consideration and respect as well as communication with managers in the event of a grievance or challenge.

4.4.5 Organisational Climate Scale

The scale for organisational climate was constructed by the following items. An item concerned with perceptions of quality as a main factor in developing new products. Employees' perceptions regarding shared awareness of what creates value for customers is measured. Employees' perceptions of the need to take time to understand the competition in the marketplace to introduce new products is measured. Consideration of customers' needs when defining the value of new products is addressed in this scale. And one item measures perceptions of innovation as a core value in the organisation. Together, these items represent the climate of the organisation in terms of the way in which employees perceive the performance and culture of the organisation. They measure the extent to which employees perceive their organisational climate as being supportive and positive.

4.4.6 Origins of Innovation Scale

The first scale for measuring innovation is origins of innovation. It consisted of eight items representing perceptions of the source of innovation: closed vs open innovation. The first item measures employees' perceptions of uncertainty as an opportunity to be exploited, since innovation involves high levels of complexity and uncertainty. Then there is an item about exploiting opportunities to create space for creativity in the department, which reflects the realisation of gaps and potential opportunities to fuel innovation processes. Another item looks at the sources of ideas, knowledge and resources from external origins, and there is a further item regarding employees' perceptions of introducing innovation based on copying others' innovations. One item in this scale is about perceptions of developing innovations internally and relying on internal efforts and ideas. The use of external resources but to the minimum extent contributed to the assimilation

of this scale representing some sorts of open innovation. The introduction of innovation based on perceptions of organisational belief in the value of innovation was also considered. Another item representing the extent to which employees perceive innovation to be introduced based on customers' needs is included. Together, all these items represent perceptions of origins of innovation in the workplace. These items hold a similar logic in relation to the origins of innovation as closed vs open innovation. The extent to which employees perceive their organisation to be engaged in closed vs open innovation is measured in these items.

4.4.7 Radical vs Incremental Scale:

The scale for radical vs incremental innovation measures employees' perceptions of the degree of innovativeness their organisation is engaged in. Five items constructed this scale. The first item measures the extent to which employees know how to contribute to innovation in their organisation. The second item is about measuring perceptions of introducing innovation based on replacing existing products. The third item is about how often the organisation introduces new products. The fourth item measures perceptions of the degree of change in the new products and whether the changes are minor. The fifth item concerns the major changes in the new products as perceived by employees. All these items combined reflect the degree of newness in the new products, varying from radical to incremental innovation. The items represent employees' perceptions of the extent to which their organisation is engaged in radical vs incremental innovation.

4.5 DESCRIPTIVE STATISTICS

Following the item analysis (item-total correlation and alpha, if item deleted) and factor analysis, a new scale of instruments emerged and identified with redefined scores for descriptive, Cronbach's alpha and item-total correlation. These descriptive analyses are presented in Table 4.6 below for each variable.

Table 4.6: Descriptive Analyses of the New Variables

	Mean	Std.	Cronbach's Alpha	Median	Range
HPWs	3.77	0.78	0.86	3.91	3.46-4.08
Expectations and Information Sharing	3.72	0.84	0.74	4.00	3.51-3.94
Hygiene Factors	3.71	0.98	0.84	3.88	3.48-3.94
Motivation and communication	3.67	0.96	0.86	3.88	3.37-4.06
Organisational Climate	3.58	0.99	0.87	3.80	3.44-3.66
Origins of Innovation	3.57	0.89	0.60	4.00	3.13-3.84
Radical vs Incremental innovation	3.59	0.91	0.61	3.75	3.40-3.93

4.6 MAIN EFFECTS

To test whether there is a likely significant impact of respondents' characteristics on variations in results for dependent variables.

4.6.1 Gender and Age

The influence of age and gender was assessed using analysis of variance (n-way ANOVA). Department and level of education were assessed separately. Table 4.7 presents findings of the main effects, as well as the two-way interaction results for gender and age. The results show no significant main effect for gender, age or gender*age.

Table 4.7: Effect of respondents' characteristics (gender and age)

Source of Variance	Origins of Innovation			Radical vs Incremental	
	df	F	p	F	p
Main Effects					
Gender	1	1.838	0.178	0.850	0.358
Age	3	2.275	0.065	1.702	0.154
Two-Way Interactions Gender*age	2	1.479	0.232	2.172	0.118

The statistical findings shown above and summarised in Table 4.7 show no significant values for age, gender, or age*gender on origins of innovation. Therefore, there is no relationship between age and gender in relation to origins of innovation.

For radical vs incremental innovation, the statistical findings fail to show a significant value of $p < 0.05$ to confirm the observed pattern. As a result, it can be concluded that there is no relationship between age and gender on radical innovation.

4.6.2 Department

Department analysis of variance violates the assumptions of the ANOVA analysis, which requires a non-parametric test as a nominal variable. Chi-square testing is applied in order to measure whether there is an association between two variables drawn from a single population. The results show no significant effect of department on any innovation dependent variable: ($\chi^2=2.33$, $df=4$, $p=0.502$) for origins of innovation, and ($\chi^2=2.407$, $df=4$, $p=0.725$) for radical vs incremental innovation.

4.6.3 Education

As with department, education as a nominal variable requires a non-parametric test, if one wishes to use chi-square testing. The results show no significant impact of education on origins of innovation ($\chi^2=1.175$, $df=4$, $p=0.544$) or on radical vs incremental innovation ($\chi^2=1.521$, $df=4$, $p=0.460$).

4.7 RELATIONSHIP BETWEEN HRM VARIABLES, ORGANISATIONAL CLIMATE AND INNOVATION SCALES

Correlation analyses were undertaken to uncover the strength and direction of the relationship between HRM variables, organisational climate and the dependent variables of innovation. Correlation results are presented in Table 4.8 below, comparing the strength and direction of each scale in relation to innovation.

Table 4.8: Correlation Results

DV: Origins of innovation	Scale	DV: Radical vs Incremental
.590**	HPWs	.594**
.410**	Expectations and Information Sharing	.532**
.549**	Hygiene Factors	.582**
.540**	Motivation and Communication	.679**
.637**	Organisational Climate	.721**

As shown in Table 4.8, there is a significant correlation between HRM variables, the organisational climate variable and both dependent variables of innovation. Interestingly, there is a high level of similarity for the strength of correlation for the dependent variables radical vs incremental innovation and origins of innovation. In addition, all of the correlations are positive, and there is no negative relationship between any of the HRM variables, organisational climate and innovation. The highest significant correlations are for organisational climate and radical vs incremental innovation ($r = .637$, $p = 0.01$) and origins of innovation ($r = .721$, $p = 0.01$), suggesting the higher a respondent's propensity toward organisational climate, the higher the awareness and involvement in following radical innovation and external sources of innovation. On the other hand, the lowest score for the correlation was for expectations and information sharing, with scores of ($r = .410$, $p = 0.01$) for radical vs incremental innovation, and ($r = .532$, $p = 0.01$) for origins of innovation. This suggests that the higher a respondent's tendency toward expectations and information sharing, the higher the awareness for radical innovation and external open innovation.

4.8 MULTIPLE REGRESSION ANALYSIS

The multiple regression test aims at assessing the relationship between a number of independent variables and a dependent variable by evaluating how the variance in a dependent variable can be explained by independent variables (Hair et al., 2007). Regression finds the best fit linear model for the observed data. Classically, it is expressed by the following equation:

$$Y' = A + B_1X_1 + B_2X_2 + \dots B_nK_n.$$

Where Y represents the predicted value of the dependent variable, A is the intercept of Y when all IVs are equal to zero, $X_{(s)}$ represents the IVs (within a given number of s) and each IV has a regression line slope expressed as $B_{(s)}$ (Hair et al., 2007).

The purpose of multiple regression for the context of this study was exploratory, i.e. to identify the character of the relationships between HRM practices, organisational characteristics and a number of identified variables measuring employees' awareness of and commitment to innovation, rather than being a predictive tool. Innovation was treated as the DV in this research, which measured two dimensions of innovation, namely radical vs incremental innovation and origins of innovation.

Before running regression analyses for each model, data screening was undertaken. A number of conditions had to be fulfilled: no marked skewness, kurtosis, and no significant violations against normality and multicollinearity (Appendices 9 and 10).

In total, two regression models were produced. Data inserted into the model also included the demographics of the respondents. This was done through a hierarchal regression model using SPSS (v 23). The first block in the hierarchal model included HRM variables, organisational climate and origins of innovation, and the second block contained the demographics (gender, age, department and level of education). A confidence limit of 95% (0.05) was used to observe significant variables instead of 90% (0.1). The use of the 95% (0.05) confidence limit was applied as an attempt to obtain robust

and more realistic variables that may potentially have a significant impact on innovation.

4.8.1 Multiple Regression Results for Origins of Innovation

The results of the first regression model are presented in Tables 4.9 and 4.10 below. Significant variables are shown in Table 4.9. Additionally, insignificant variables were not included in the rerun of the regression model; however, they are kept in the regression tables presented here in order to show a comparison of the significant and insignificant variables.

Table 4.9: Multiple regression model: DV= Origins of Innovation

Model		Unstandardised Coefficients	Standardised Coefficients	Sig.
		B	Beta	
1	(Constant)	5.308		.000
	HPWs	.375	.610	.002
	ExpectationsInfoSharing	-.214	-.247	.058
	HygieneFactors	.217	.388	.002
	MotivationCommunication	.332	.477	.000
	OrganisationalClimate	.264	.420	.000
2	(Constant)	5.934		.000
	HPWs	.312	.502	.001
	ExpectationsInfoSharing	-.191	-.220	.099
	HygieneFactors	.213	.326	.002
	MotivationCommunication	.311	.434	.000
	OrganisationalClimate	.270	.429	.000
	Gender	-.294	-.053	.447
	Age	.011	.003	.966
	Education	-.239	-.047	.677
	Department	.838	.159	.143

Table 4.10: Model Summary

Model	R	R Square	Adjusted R Square	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
1	.671 ^a	.450	.428	.450	20.131	5	123	.000
2	.674 ^b	.454	.418	.004	.310	4	120	.818

Table 4.9 above shows the hierarchical regression model results, which indicate that the regression model for origins of innovation explains 45% (42.8% adjusted) of the variation in the dependent variable. When inserting demographics into the regression model, the change in R and adjusted R was not significant. The outcome of the hierarchical regression indicates that the respondents' demographics did not increase the model's predictive capacity in a statistically significant way. Rather, the impact or potential impact of age, gender, education and department was insignificant. This is explained by the scores for R square, adjusted R and R square change and the change in F values. When testing the significance of the dependent variables on origins of innovation, the R square was 45% (42.8% adjusted), R square change was 45%, F change was 20.131 and the value of F change was significant ($F = 0.000$). Considering the impact of demographics in the hierarchical regression model, the results show that the change in the R square, adjusted R square and R square change were very minimal (R square changed from 45% to 45.5%; adjusted R square changed from 42.8% to 41.8% and the change in R square was $0.004 = 0.4\%$). Additionally, the score of F change value was (0.310) and insignificant (0.818).

These results suggest that demographics have an insignificant effect on the relationship between HRM variables, organisational climate and origins of innovation.

Variables that contributed significantly to the regression model were: HPWs ($B=0.610$, $p<0.002$), hygiene factors ($B=0.388$, $p<0.002$), motivation and communication ($B=0.477$, $p<0.000$) and organisational climate ($B=0.420$, $p<0.000$). These values exposed a significant impact on origins of innovation

following the insertion of demographic variables. The change in the level of significance was not remarkable, though: HPWs ($B=0.502$, $p<0.001$), hygiene factors ($B=0.326$, $p<0.002$), motivation and communication ($B=0.434$, $p<0.000$) and organisational climate ($B=0.429$, $p<0.000$). In confirming the observed patterns of the R square and changes in R square values following inserting age, gender, education and department, these variables were statistically insignificant for origins of innovation: gender ($B= -0.053$, $p<0.447$), age ($B= 0.003$, $p<0.966$), education ($B= -0.047$, $p<0.677$) and department ($B= 0.159$, $p<0.143$).

4.8.2 Multiple Regression Results for Radical vs Incremental Innovation

Multiple regression output is presented in this section. Two tables (4.11 and 4.12) show the results. Similar to multiple regression for origins of innovation, insignificant variables (s) are shown in Table 4.11; however, they were not included in the final regression model, which contained only significant variables.

Table 4.11: Multiple regression model: DV= Radical vs Incremental Innovation

Model		Unstandardised Coefficients	Standardised Coefficients	Sig.
		B	Beta	
1	(Constant)	5.740		.000
	HPWs	.161	.347	.003
	ExpectationsInfoSharing	-.028	-.033	.776
	HygieneFactors	-.003	-.008	.947
	MotivationCommunication	.194	.453	.001
	OrganisationalClimate	.287	.540	.000
2	(Constant)	4.605		.000
	HPWs	.168	.423	.001
	ExpectationsInfoSharing	-.042	-.049	.671
	HygieneFactors	.004	.011	.932
	MotivationCommunication	.194	.453	.002
	OrganisationalClimate	.321	.521	.000
	Gender	.463	.085	.160
	Age	.382	.117	.078
	Education	-.544	-.109	.267
	Department	.514	.100	.290

Table 4.12: Model Summary

Model	R	R Square	Adjusted R Square	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
1	.754 ^a	.568	.550	.568	32.332	5	123	.000
2	.768 ^b	.590	.563	.022	2.188	4	120	.093

Tables 4.11 and 4.12 above show the results for the hierarchical regression model for the second dependent variable of innovation, i.e. radical vs incremental innovation. The value of the model's R square indicates that the origins of innovation regression model explains 56.8% (55% adjusted) of the variance in the dependent variable. Demographics had no significant impact on the dependent variable, and no significant predictive capacity was obtained when inserting demographic variables. This is clearly indicated by the scores for the R square, Adjusted R square, change in R square and change in the significance of F value.

The R square score was 56.8% (55% adjusted), which changed to 59% (56.3%) when considering the demographic variables. R square change went from 56.8% to 2.2%, which does not offer any meaningfully significant contribution to the assimilation of the model. The F score was significant for the dependent variables (0.000) and insignificant when testing the demographics (0.093). The F change score was 32.332 for the dependent variables and 2.188 when inserting the demographics into the model.

A number of variables had a significant impact on radical vs incremental innovation: HPWs ($B=0.347$, $p<0.003$), motivation and communication ($B=0.453$, $p<0.001$) and organisational specific ($B=0.540$, $p<0.000$).

These variables remained significant for radical vs incremental innovation when inserting demographic variables into the regression model. The new scores of significant impact were as follows: HPWs ($B=0.423$, $p<0.001$), motivation and communication ($B=0.453$, $p<0.002$) and organisational climate ($B=0.521$, $p<0.000$). Demographics variables contributed insignificantly to the assimilation of the regression model: gender ($B=0.085$,

$p < 0.160$), age ($B = 0.117$, $p < 0.078$), education ($B = -0.109$, $p < 0.267$) and department ($B = 0.100$, $p < 0.290$).

4.9 DISCUSSION

This section presents the discussion on the main findings of the multiple regression models. First, the section discusses the main and overall findings for both models, following which a comparison between the findings of the two regression models is presented and discussed.

The research found that employees perceive HRM practices to have influence on innovation awareness and commitment among employees. HRM practice can potentially affect radical innovation – that is, employees' abilities to introduce radical products. In addition, the research found that HRM practices promote open innovation more than closed innovation. As a whole, employees perceive HRM practices to potentially have a significant impact on and promote open radical innovation. More precisely, the extent to which employees perceive HRM practices to make their organisation engaged in innovation is significant and positive. In line with research aims and questions, it is worth mentioning here that whenever the research mentions the relationship between HRM practices and innovation awareness and commitment it means the perception of HRM practices to promote innovation in the workplace and the extent to which the organisation is engaged in innovation.

HRM practices seem to have a significant impact on innovation awareness and commitment. Moreover, employees perceive that radical innovation and external origins (open) of innovation seem, potentially, to be promoted when implementing HRM practices and considering organisational climate (characteristics) as research findings show.

In regard to departmental characteristics, the research found that there is no significant impact based on departmental position or the nature of a job. To put it more clearly, HRM practices that impose a significant impact on innovation awareness and commitment do not vary based on the nature of the department. This is shown by the insignificant scores produced by regression models, thereby suggesting no significance for a department.

HRM practices that affect employees within service-led departments (HRM/sales) appear to be the same for employees within innovation-focused departments (R&D/product development). However, there might be some variation among employees within different departments regarding how and why these practices might promote their innovation awareness. This notion is discussed in Chapter 5.

For origins of innovation, hypotheses H (A-1), H (A-2), H (A-4), and H (A-5) were confirmed. In relation to radical vs incremental innovation, hypotheses H (B-1), H (B-4), and H (B-5) were accepted. Significant variables were HPWs, hygiene factors, motivation and communication and organisational climate, all of which had a positive impact on origins of innovation. Motivation and communication and organisational climate were the most significant variables in relation to having an effect on origins of innovation: ($B = 0.477$, $p < 0.000$) and ($B = 0.420$, $p < 0.000$), respectively.

In line with previous studies, HPWs (including training, recruitment, performance appraisal and job design) had a positive significant impact on the external origins of innovation and radical innovation. This finding confirms the work of Shipton *et al.*, (2006) and Zhao *et al.*, (2012). This outcome is expected, as the value and aim of this HRM model is to develop employee performance and entails higher levels of involvement as well as skills development (Boxall and Purcell, 2008; Shipton *et al.*, 2006). In addition, HPWs denote that the organisation is committed to acquiring an environment that encourages employee development and performance, regardless of their level in the hierarchy (Boxall and Purcell, 2008). These beneficial outcomes of HPWs are likely to contribute to employees' awareness of and commitment to innovation. The use of external resources and open channels to innovate can be enhanced by HPWs aimed at increasing the levels of skills and development within the organisation. This creates a greater potential to introduce sweeping changes in new products, as radical innovation is likely to take place when employees enjoy higher levels of skills and development (OECD, 2011). The use of external resources for innovation and following an open innovation approach requires in many cases skills development and increasing levels of involvement and commitment, in order

to acquire more resources, access new knowledge and transfer them to the organisation, which can potentially explain the positive impact of HPWs on external origins of innovation and radical innovation.

Strategically, HPWs are best known for enabling organisational competitive capacity and orientation (Armstrong, 2011). A firm's ability to compete, renew itself, survive and be unique in the market lies within individuals' willingness and commitment to perform their tasks efficiently (Fu *et al.*, 2015; Teece, 2007; Barney, 1991). In line with open innovation and radical innovation, the implementation of HPWs is likely to affect employees' awareness around using sources and open channels more effectively and allowing the introduction of major changes into new products. This is a result of the development of their skills, which allows them to apply a variety of possible solutions to challenges. This can explain the significant impact of HPWs on origins of innovation.

As innovation exposes employees to waves of complexity and unpredictable demands, it is then encouraged that the organisation has some levels of awareness of multiple sources, in order to facilitate the innovation process (Damanpour *et al.*, 2009; Damanpour, 2010; Bouncken *et al.*, 2017). Adopting open innovation requires collaboration with other suppliers, competitors and markets, and for radical innovation a mixture of knowledge, skills, sharing information and recruiting experienced employees is considered as prerequisites. Therefore, it is more rewarding for the organisation and employees to adopt a bundle of HRM practices, which is within the main realm of HPWs (Bouncken *et al.*, 2017; Boxall and Purcell, 2011). HPWs are widely labelled and conceptualised as 'best practice', whereby an overarching set of practices is applied in various circumstances. The logic behind HPWs lies in defining a set of practices that are beneficial to the organisation in different conditions and situations. Distinctively, HPWs propose that a bundle of practices is more beneficial for the organisation and imply a positive impact on performance rather than implementing individual practices (Armstrong, 2011; Fu *et al.*, 2015). In the case of open innovation, the process of acquiring external qualities and inserting them into the internal environment of the organisation means that employees to have multiple

tactics that can be maintained professionally in line with the organisation's HRM policies. By nature, radical innovation is a multifaceted process, the outcome of which requires a number of inputs that have some sort of uniqueness and value compared to the level of tasks and competitors in the market. Such inputs can be influenced and shaped directly by HRM practices. More significantly, HRM practices can also be customised through HPWs, as they contain a variety of practices based on a certain need through a radical innovation processes.

Another significant HRM practice in relation to the external origins of innovation is hygiene factors, which encourage employees to be more motivated and engaged in their tasks, as the workplace is characterised as having good working conditions (Lang, 2005). This can develop employees' capacity to work hard and be more committed. A positive impact on origins of innovation is expected, potentially because these factors are motivation-oriented and can stimulate the processes associated with innovation and act as antecedents to innovation. Adopting open innovation and collaborating with external suppliers and sources of knowledge and assets demands a mixture of motivation and satisfaction in the workplace. Hygienic HRM is capable of eliminating dissatisfaction at work and allowing employees greater insights into what can be done to create value and feel more competitive (Herzberg, 1996). The presence of hygienic HRM such as health and safety and employee security when exchanging ideas, accessing external knowledge, and collaborating externally supports the assimilation of innovation-related activities. In addition, as external ideas and knowledge do not follow the same filtration process already prevalent within the organisation (Baker *et al.*, 2016), good working conditions and satisfaction create a higher propensity for the effective deployment and use of knowledge and information.

To sustain innovation, individuals need to have an encouraging work environment and safe working conditions. Coupling innovation processes with hygienic HRM factors can act as a trigger for greater levels of motivation and involvement, which in turn may result in enhanced performance and awareness of value creation activities. In the case of open innovation, this

can result not only in gaining access to new knowledge with motivational attitudes, but it can also build a series of networks that can be used confidently in future events related to innovation, since hygienic HRM promotes assurance, confidence and motivational work-related behaviours (Herzberg, 1996; Lang, 2005).

Motivation and communication have a significant impact on promoting external origins for innovation and radical innovation. This result is expected, as motivation and communication factors suggest the flow of problem solving, idea generation and innovation-related activities within the organisation (Ehrnrooth and Bjorkman, 2012). Moreover, the adoption of open innovation necessitates that the organisation and its members, especially those involved in innovation require access to external sources of knowledge and assets (Chesbrough, 2003; 2006). Communication is the exchange of ideas and knowledge and builds an organisation-friendly climate to increase levels of job engagement and involvement, and helps management understand employees' needs better (Goris, 2007). This supports Goris's (2007) explanation of employee communication, which entails management understanding their needs and allowing them to express themselves and communicate at all levels. Motivation plays a central role in encouraging employees to perform their tasks. Employees within HRM/sales departments are in direct contact with the external environment, represented by customer and market needs. Similarly, employees within R&D/product development departments are engaged in direct innovation activities such as idea generation and transforming these ideas into actual products and services. Radical innovation requires higher levels of engagement, motivation, communication and support specific to the organisation (Ritala and Hurmelinna-Laukkanen, 2013). Therefore, recognising employees' efforts and performance can inspire and support their willingness to understand and approach customer needs and engender greater potential to facilitate radical innovation. This in turn could create space for new ideas and guide the organisation in the introduction of new products. This finding supports the work of Ehrnrooth and Bjorkman (2012), in that recognising employees' efforts and encouraging them can stimulate higher levels of

motivation and commitment at work, which can result in enhanced performance and task outcomes.

Organisational climate, which had a significant impact on origins of innovation and radical innovation, refers to the characteristics of the organisation. The positive significant impact was expected, and a potential explanation is that as organisational climate (performance and culture) is specific to the organisation based on the experiences, setting and resources acquired, it can create values that go in line with the capabilities and capacity of the organisation to innovate. The organisational climate holds the common assumptions of what can create value and benefits for the organisation and customers (Dobni, 2008). When it is focused on specific origins and sources of innovation (external sources) for open innovation, it is vital that members of the organisation are familiar with what product changes are required by customers and how to use external resource channels and knowledge to access and implement effectively these new compositions. This also can promote the adoption of radical innovation, as the use of external networks supports accessing and obtaining new knowledge and resources is likely to create radical changes and improvements to new products and services. Adequately designing and encouraging the organisational climate to host new ideas and resources, and to transfer them to actual beneficial products and services, can promote awareness among employees of the adoption of external origins of innovation (Delaney and Huselid, 1996; Damanpour *et al.*, 2009). This is expected, as organisational performance and culture entail the introduction of high-quality products that deliver customer satisfaction. Previous research conducted by Delaney and Huselid (1996) and Dobni (2008) on organisational characteristics and climate, and their potential impact on innovation, found a positive influence of organisational climate, such as culture and performance, on innovation, which is confirmed in the findings of this research.

Organisational climate underpins the capacity and dynamics that promote innovation-related activities such as creativity, risk-taking, team-working spirit, organisational culture and performance. Acquiring a suitable climate encourages open innovation to take place, as this can help internal and

external surroundings to support the flow of knowledge and ideas. Radical innovation, similarly, is hosted by a climate that is characterised as employee-friendly and combines some elements of value creation factors such as culture, which believes in innovation, and performance that identify what changes and quality need to be introduced.

Employees in departments engaged in innovation have a greater opportunity to contribute to and understand customer needs and deploy the necessary resources. This finding agrees with Delaney and Huselid (1996) on organisational performance, as they suggested that performance is linked to product quality and customer satisfaction, whereby greater potential applies to continuous development and the ability to offer competitive products. Additionally, a supportive culture for value creation and a spirit of innovation can greatly influence employees' promotion of innovation (Dobni, 2008). The outcomes of these elements are expected to increase awareness levels regarding innovation among employees, since they gain more experience and a better understanding of the organisation's ability to innovate and customer needs, and most importantly they can contribute to the organisational capacity to innovate.

This research confirms previous studies on the impact of HRM practices on innovation. Moreover, it has identified new HRM practices that have a potential impact on innovation which have not been considered and studied previously. Former studies, as detailed in Chapter 2, were limited to a subset of HRM practices largely borrowed from the HPWs school of thought; however, this research is a serious attempt and has gone beyond the existing traditions and boundaries of existing studies to consider the relationship between HRM practices and innovation. The predominant variables HRM employees perceived as affecting innovation (following the results) were identified by this research. Considering both dependent variables, namely origins of innovation and radical vs incremental innovation, the results show a high level of consistency and similarity with what may potentially influence innovation. HPWs, motivation and communication and organisational climate were significant for both factors; however, only hygiene factors were insignificant for radical vs incremental innovation but significant for origins of

innovation. Similarly, expectations and information sharing did not have a significant impact on either variable.

The results suggest that, based on the nature of innovation activity, the significance of HRM practices might differ; that is, employees' perceptions of the impact of HRM practices in promoting innovation. This can be concluded from the significant impact of hygiene factors on origins of innovation and the insignificant effect for radical vs incremental innovation. This finding, however, is due to the fact that innovation is a complex process which demands various resources, knowledge and ideas. Moreover, what might create value for some types of innovation or even the organisation might be disadvantageous or not of any great benefit for other aspects of innovation. In this regard, HRM practice scholars (Veryzer 1998; Lee and O'Connor, 2003; Holahan *et al.*, 2014) have indicated that while some organisational activities can indeed be positive for some forms or types of innovation, the same organisational practices and arrangements might be insignificant or negative for other types of innovation, for example in the case of this research promoting origins of innovation but no effect on radical vs incremental innovation. Furthermore, the gap between the real and anticipated outcomes of HRM practices by management and organisations, as well as employees' perceptions of HRM practices, can be problematic and create platforms for such an effect on innovation awareness and commitment outcomes.

Another explanation for such a result is that employees' expectations and perceptions of specific HRM practices – and the gap between – can differ from the real purposes and intended contribution of these practices designed by the management or the organisation, thus producing different behaviours toward HRM practices (Gibb, 2001; Sanders *et al.*, 2008). Overall, the findings from this research appear to support Gibb's (2001) notion that a satisfactory estimation and assessment of the effectiveness of HRM practices does not necessarily indicate a happy or satisfied workforce. That is, employees' satisfaction with HRM practices and policies does not always point to effective and positively influential HRM, which might explain the

results from this research. Table 4.13 below summarises the significant variables for each dependent variable.

Table 4.13: Comparison of the findings between the dependent variables: origins of innovation and radical vs incremental innovation.

Origins of Innovation	Independent Variables	Radical vs Incremental Innovation
✓	HPWs	✓
	Expectations and Information Sharing	
✓	Hygiene Factors	
✓	Motivation and Communication	✓
✓	Organisational Climate	✓

The results also showed no significant role of departments, i.e. HRM practices do not differ based on the department, as there was no significant impact on the hierarchical model. This is most likely because there are existing levels of awareness and commitment to innovation among employees, regardless of their position in the organisation. In addition, innovation is a complex process and likely to entail multifaceted aspects that demand contributions and collaboration from different units of the organisation. The role of HRM in sales departments, for example, is considered a pre-innovation and post-innovation facilitator involving understanding customer demands and market needs, obtaining feedback and then providing this information to innovation-focused departments such as R&D and product development departments. This indicates that the engagement of different departments in processing innovation is essential and already taking place in Orange.

Table 4.14: Accepted and Rejected Research Hypotheses.

<i>Origins of innovation (H-A)</i>	<i>Hypotheses</i>	<i>Radical vs Incremental innovation (H-B)</i>
✓	H (1) HPWs promoting open innovation.	✓
No Support	H (2) Expectations and information sharing promoting open innovation.	No Support
✓	H (3) Hygiene factors promoting open innovation.	No Support
✓	H (4) Motivation and communication promoting open innovation.	✓
✓	H (5) Organisational climate promoting open innovation.	✓
No support	H (C) Departments significant in the way employees perceive the relationship between HRM practices and innovation.	No support

4.10 CHAPTER SUMMARY

This chapter presented and discussed the statistical data analyses. Respondents' characteristics and descriptive statistics of the responses to each scale were summarised, indicating positive mean scores for the responses. Reliability tests, including item-total correlation and Cronbach's alpha for the scales, were tested and discussed. Factor analysis, using principal component analysis, was conducted and the factor structures proposed new variables, following which new labels (names) were created for these variables. In total, five factors were identified: HPWs, expectations and information sharing, hygiene factors, motivation and communication and organisational climate. For the dependent variables of innovation, two variables were produced, namely origins of innovation and radical vs incremental innovation. Based on the scores of the item-total correlation, Cronbach's alpha and item analysis, the new scales were modified.

Results for the correlation analyses showed a significant relationship between HRM practices and innovation. Hierarchical multiple regression showed no significant contribution for demographics on the assimilation of the models for both dependent variables. Age, gender, department and education were tested to assess the likely change in R square, change in R square and F change. The output of the hierarchical regression model suggests no significant change in the predictive capacity of the model when considering demographics.

A number of HRM practices had a significant impact on innovation awareness and commitment. All significant variables were positive in relation to innovation. Regarding origins of innovation, HPWs, hygiene factors, motivation and communication and organisational climate were significant. For radical vs incremental innovation, HPWs, motivation and communication and organisational climate had a significant impact. The extent to which HRM practices may potentially affect innovation awareness and commitment was profound and consistent, and it was possible to draw predominant variables on the basis of the results, as there was a degree of similarity between the outputs of the two regression models.

CHAPTER FIVE

INTERVIEW RESULTS AND ANALYSIS

5.1 INTRODUCTION

This chapter details results from and analysis of semi-structured interviews undertaken with managers and employees in the Orange Telecommunications Company. Participating managers were from HRM, Sales and R&D departments. Participating employees were from HRM, Sales, R&D and Product development departments. The objective of this chapter is to gain better insights into and understanding of the findings from the quantitative results obtained from phase one of the research discussed in Chapter 4. In addition, the value of the second phase of the research is its potential to explore and understand the findings from the survey questionnaire presented earlier.

The chapter consists of the following sections. It starts by presenting the results of interviews conducted with managers (Section 5.2), followed by a summary of these interviews (Section 5.3). Next, Section (5.4) presents the results of our interviews with employees, followed by a summary of the interviews in Section (5.5). Subsequently, in Section 5.6, a discussion of the results from the interviews with the managers and employees is presented. Links to the results from the survey questionnaire are also offered and demonstrated, as well as results covering the main variables in the survey questionnaire, namely HR, HRM, organisational climate and innovation. The chapter concludes with a summary of its main themes, presented in Section 5.7.

The interviews, categorised as ‘semi-structured phone interviews’, were conducted with managers and employees in Orange. Demographic information regarding gender, age and department for key personnel is summarized in Table 5.1 and for employees in Table 5.2. In total, three key personnel (two senior managers and a head of department) agreed to participate in the interviews. Managers of the HRM, Sales and R&D departments participated in the interviews. Two of the key personnel were

male and one female. In relation to employees, a total of seven interviews were conducted across the HRM, Sales, R&D and Product development departments. Five male respondents and two female respondents formed the sample group of employees. For all interviews, both with key personnel and employees, the age range was from 32 to 52 years.

Table 5.1: Respondents' characteristics (key personnel)

Characteristics		Orange N=3 (Key Personnel)	
Gender	Male	2	66.6%
	Female	1	33.3%
Department	HRM	1	33.3%
	Sales	1	33.3%
	R&D	1	33.3%
Age	30-40	1	33.3%
	41 – 50	1	33.3%
	Over 50	1	33.3%

Table 5.2: Respondents' characteristics (employees)

Characteristics		Orange N=7 (Employees)	
Gender	Male	5	71.4%
	Female	2	28.6%
Department	HRM	2	28.6%
	Sales	2	28.6%
	R&D	2	28.6%
	Product development	1	14.2%
Age	30-40	2	28.6%
	41 – 50	3	42.8%
	Over 50	2	28.6%

As discussed in Chapter 3, the interview questions were originally formulated in English. However two-way translation was used to translate the content and questions of the interviews into Arabic. This was done to raise levels of awareness and understanding of and participation in the interviews. Prior to each interview, participants were reminded of the aims and nature of the research and interviews, as well as the issues of confidentiality and anonymity discussed in Chapter 3. On average, each interview lasted around

45 to 60 minutes. Transcripts of all the interviews can be found in Appendix (4 and 6).

The purpose of this chapter is to gain better insights into the quantitative data collected through the survey and better understand the perceptions of the relationship between HRM practices and innovation awareness. The rationale behind approaching managers to participate (in addition to employees) was due to that it was felt that senior managers or key personnel would be able to provide more explanation and fuller understanding of the issues regarding HRM and innovation in their organisation. Following data collection, the template analysis technique was adopted to analyse the interviews. Thorough reading of the transcripts led to the generation and identification of a number of codes. Chapter 3 provided more details and insights into the methodological approach for the qualitative phase.

5.2 INTERVIEW RESULTS: MANAGERS

This section presents the results for the interviews. It starts by introducing the results of the interview with managers and a separate section subsequent to this section will deal with results from employees (Section 5.3). A number of themes emerged from the responses of the interviewed managers. HR, innovation, organisational climate and the relationship between these main themes were identified. These themes were originally developed along with main research questions in addition to interview questions.

The section is divided as follows; it starts by presenting results for HR. Then a subsection for HRM practices and approaches for HRM is introduced. Following that, a subsection for innovation is introduced.

Managers were asked a number of main questions followed by sub-questions in relation to HR and their views and assumptions in this respect. The value of HR and its importance for the organisation were among the topics that each interviewee was asked about, along with HRM, innovation and organisational characteristics. From the data, a coding exercise was undertaken to structure and understand the data from which the following narrative has been identified.

5.2.1 Competitive Advantage

A number of questions were asked in the interview in relation to HR and its value for the organisation. The importance of HR is widely recognised in the interviews. Across all the interviewed managers, a shared belief was the importance of HR in achieving competitive advantage. All the managers referred to HR as a source of competitive advantage. During all the interviews, the managers acknowledged that HR are vital for the daily activities and operations of the organisation. This could be due to the role of HR in acquiring new ideas, knowledge and skills, which means that HR can thus positively influence performance of tasks and operations in the organisation. In addition, this could be interpreted and explained as the role of HR in developing and sustaining competitive advantage through the development of unique skills, knowledge and experience. Given the intense competition in the Jordanian telecommunications market, it can be widely seen that sustaining competitive advantage is central to facing rivals, thriving and surviving in the marketplace.

For example, the manager of HR conceptualised HR function as the cornerstone of most of operations within the organisation as well as a main source of ideas and knowledge. The following statement confirms this fact:

“HR plays a vital role in our company. It’s the cornerstone for most of our operations and it’s the main source of ideas, knowledge and [...] competitive advantage”

Despite that all managers stressed the importance of HR to sustain competitive advantage, there was distinct response and level of details mentioned by each manager. For instance, R&D manager sheds the light on the role of HR function in acquiring knowledge, creativity and solve problems. In addition, R&D manager indicated the value of HR for the processes and use of technology. The telecommunications industry relies heavily on technological advances and the unique use and implementation of the technology in order to introduce new products and services as well as to compete with rivals. Organisations tend to offer technological advances combined with knowledge and creativity, to ensure and maximise the benefits

and potential outcomes of the insertion of technology. Moreover, a twofold benefit could take place and technology could positively enhance employees' and organisational performance. This can be summarised as the knowledge and creativity that technology may facilitate and, on the other hand, the knowledge and creativity needed in the first place to acquire the use the technology. In confirming this, R&D manager stated:

“HR is the source of knowledge and creativity. I mean, HR is considered in our company as a valuable asset. The processes we follow, the use of technology, problem solving and new ideas are all from our HR. [It] is our main source of competitive advantage”

As far as telecommunications companies are concerned, regarding competition they are more likely to make organisational arrangements that minimise the jeopardy from their competitors and maximise the use of their current assets and abilities. For example, the Sales department manager, similar to the other managers, indicated the importance of HR in relation to competition in the market. He then described HR as a tool providing the organisation with committed and qualified employees, thus differentiating it from its competitors. The skills and uniqueness that HR provide and advance to employees and their organisation can be significant in the organisation's daily activities. This can be confirmed by the following statement by the Sales manager:

“HR forms our unique advantage compared to our competitors. If you ask me to rank our resources and assets in the organisation, I would say HR is our most important asset. [It] plays a role in every single unit and action in our operations. That's why, no matter the competition in the market, having HR that is committed and qualified differentiates who we are as a company and the way we do things”

Similar to the assertion made by the manager interviewed regarding HR and its significance for competitive advantage, all managers claimed that HRM is vital for competition and competitive advantage. The word 'HRM' was mentioned five times in relation to competition.

Since HR is perceived as valuable assets for the organisation and as a source of competitive advantage, and due to the organisation's very basic objective of enhancing and developing HRM and its practices, the value added to HRM by conceptualising HR as crucial for daily activities and operations is likely to influence the ability to achieve competitive advantage and compete in the marketplace. As HRM deals with managing employees' activities and their relation with the organisation, linking HRM with beneficial and valuable outcomes drive the organisation to wider growth prospects and competitiveness. In confirming this fact, the manager of HR department acknowledged the value of HRM for competition and gaining more customers and contributes to successful innovation. He stated the following:

"[...] without HRM we cannot compete properly in the marketplace. We would be unable to develop new products or services or even understand how to achieve customers' needs or use the knowledge... HRM is what helps us to introduce successful innovation"

While the HR manager stressed competitiveness, the importance of HRM in enhancing the quality of innovation was mentioned by the R&D manager. Innovation requires antecedents, along with organisational capacity and ability to innovate. This capacity lies in organisational arrangements and procedures that can directly improve outcomes and meet objectives. This is confirmed by the following statement by the R&D manager:

"HRM practices can enhance the process of innovation and the quality of innovation. I strongly believe that the success of innovation depends to a great extent on HRM"

5.2.2 Holistic Approach

In respect to the adoption of HRM practices, all the informants indicated that their organisations adopt a bundle of HRM practices rather than individual practices. The managers expressed the value of a bundle of practices, as it provides them with the opportunity to gain more benefits and positive outcomes.

The managers showed high levels of awareness regarding the adoption of a holistic approach to HRM practices. The value and outcomes of following such an approach is more constructive and strategic for the organisation. Generating more benefits and greater competitiveness and achieving a wide range of activities can be facilitated by exposing employees to extensive and comprehensive organisational HRM practices. As an example, during an interview the R&D manager claimed that more positive outcomes and value are generated when a bundle of HRM practices are implemented:

“We adopt a number of HRM practices rather than individual practices. The value-added from adopting a bundle of HRM practices differs when we implement a number of the practices. I think the benefits we get from applying individual practices is less than when applying a number of them”

Perceiving a holistic approach to HRM practices can also support the performance and function of the organisation. This can be viewed as processing tasks and activities faster, saving time and increasing ability to support variety or tasks. This view was asserted and confirmed by the HR department manager, who mentioned the role of a bundle of HRM practices in supporting organisational functions and performance:

“Well, in our company we implement HRM practices as a collective number of practices rather than individual practices. And we do this because we believe in the importance of HRM practices supporting different organisational functions, mainly performance and the speed of performing tasks”

HRM practices encompass a wide range of practices and activities; a strong assertion was shared by all the managers that recruitment, motivation and job engagement are among HRM practices that their organisations adopt. In addition to these, the managers also claimed another variety of practices. Their responses were distinct from those of each other and they only shared the aforementioned practices in their claims. For example, a wide range of practices were mentioned by HR manager:

“We implement a number of HRM practices, but we focus mainly on recruitment, motivation, performance appraisal, absence management, employee development, job engagement, health and safety at work, retention management and training”

According to the R&D manager, many practices mentioned by the HR manager are not essential and are not adopted in the organisation. However, less number of practices were acknowledged by R&D manager:

“We implement motivation, absence management, knowledge sharing and other practices”

For the Sales manager, the following practices were identified for application in the organisation:

“The practices that we adopt range from employee development, training, job engagement and absence management, to recruitment and motivation”

The practices identified by the managers, despite the variety of their responses, are important and relevant to the organisation in one form or another. Although recruitment deals with equipping the organisation with highly skilled and talented employees, other practices seem to be prioritised by some managers.

In ranking HRM practices according to which are most important and most prioritised by management, all the managers interviewed expressed their interest in recruitment, motivation and job engagement in this regard. For example, the Sales manager stated that recruitment is the most important practice. He added that motivation is vital and it enhances employees' commitment and performance:

“Recruitment is considered our main interest and concern for HRM activities... Motivation, for example, can keep our employees committed and inspired to do more and enhance their performance. Job engagement also is considered to be important for us”

HR manager prioritised the following practices:

“Recruitment, motivation, and job engagement are considered to be the most important HRM practices we adopt”

R&D manager indicated the following practices:

“Motivation and job engagement are recognised as the most important practices we adopt”

While expressing their prioritisation of these practices, the managers explained that these practices are considered so important for their organisations because of their positive impact on employees' performance, abilities, skills and involvement. The results revealed that the influence and impact of HRM practices on enhancing employees' commitment, motivation and performance was mentioned by HR manager:

“[...] these practices can directly affect and improve employees' performance and commitment. Moreover, we focus on these practices to increase employees' motivation, involvement, abilities and skills”

Increasing levels of engagement and commitment, as well as employees' involvement, is essential to enhancing the quality of products, competition and innovation. Aligned with competitive advantage and performance of daily activities and tasks in the workplace, job engagement, motivation and recruitment can be seen as practices that can directly fuel such processes and objectives. An example of this is what is stated by R&D manager that the value of these practices to increase levels of engagement was acknowledged by R&D management:

“[...] developing employees' abilities and skills. We aim mainly to increase their engagement and development. All these practices aim to achieve higher commitment and involvement”

The interviews demonstrated high levels of understanding of the importance of HRM practice for innovation. This was widely discussed and presented in Chapter 2. Managers' claims and statements during the interviews indicated positive support for the discussion of the value of HRM for innovation and the role of HRM practices in sustaining innovation. HRM practices are capable of

providing employees with antecedents and prerequisites that can facilitate idea generation and implementation and the innovation process. This is confirmed in highlighting the value of HRM practices for innovation indicated by two managers where they shed light on the role of HRM in developing employees' skills, abilities and knowledge, in order to encourage innovation. For instance, HR manager mentioned that skills and abilities are linked to HRM practices and crucial to innovation:

“HRM is crucial for innovation. In essence, HRM can develop employees' skills, abilities and knowledge”

Given the need to continuously compete, develop products and innovate, organisations are encouraged also to revise and reconsider their existing policies and HRM practices to ensure smooth, or at least 'objective-friendly', efforts and activities. Among these are HRM practices that encapsulate the nature of the foreseen outcomes that the organisations seek to achieve. This is clearly stated by one of the managers in the interviews. An example of this is the Sales manager's acknowledgement that HRM practices are directly related to innovation and that the organisation defines and modifies HRM practices to achieve innovation:

“HRM practices always play a vital role in creating innovation. Skills, knowledge, the abilities of employees, motivation, involvement and satisfaction at work and many other positive outcomes that HRM impose are vital for innovation... In many cases in this organisation we define and modify a number of practices in order to fulfil our innovation needs”

HRM practices are promoted by different aspects of organisational abilities, resources and uniqueness. For some organisations, financial assets can be a main factor in enabling HRM practices, while for others internal networks and communication with managers and within teams are vital for HRM practices to be implemented and create positive outcomes for employees. The interviewed managers stated that HRM is promoted and supported by the following drivers. Two managers shared their view on the role of team management communication in supporting HRM. They highlighted that HRM

practices through better communication with management can help in the smoother implementation of HRM practices. This is confirmed by the managers from the HR and Sales departments, who stated the following

“Also, we have support from the management for HRM and direct communication between employees and the management team”
[Interview One-HR].

“In addition, open channels with the management team are provided to all employees regardless of their job title, so this can help [nurture] better understanding and smoother implementation of HRM practices”
[Interview Three-Sales].

In addition to that, ensuring that employees understand what they have to accomplish and the relevance of HRM practices to their activities is also significant in promoting HRM practices successfully. In this respect, as distinct from the HR and Sales managers, the R&D manager indicated that the organisation holds annual meetings and sessions with employees which can act as a promoter and enabler of HRM practices so the organisation can introduce HRM practices in a better way.

“We have annual meetings with employees to assess their understanding of HRM practices... Also, we can identify employees based on their abilities and skills, so in some cases we do not ask some employees [to undertake] many tasks or complex responsibilities until we are sure they are capable of doing so”

Despite its vital importance to the aforementioned and identified factors, HRM, in any organisation face a number of barriers and challenges. As any other resources that organisations acquire and provide the organisation with unique characteristics, HRM practices have some challenges and barriers. According to the interviewed managers, HRM faces a number of barriers. All the interviewed managers expressed that the main challenge for HRM is differences between employees. Some employees exhibit greater abilities and skills to perform tasks, as expressed by the managers in the following

way. For example, the manager of HR department shed the light on differences in the form of abilities that employees have:

“The differences between employees in terms of abilities. Also, the nature of HRM practices needed for different tasks”

Similarly, R&D manager added that differences in skills is the main challenge for HRM and that management in many cases failed to diminish such differences:

“I think the differences between employees’ abilities and skills are the main challenge and barrier. Sometimes, we as a management team cannot minimise these differences”

It can be challenging for the organisation to increase employees’ understanding and awareness of the nature of HRM practices and to implement and develop HRM practices. Line management and team are highly recommended to ensure that employees absorb and understand the nature of HRM practices. In confirming this, one manager indicated that employee awareness and understanding of what is expected from them can be a barrier for HRM. The Sales manager added that the lack of understanding of the nature of HRM practices and the time needed to develop HRM practices are challenging for the organisation:

“Employee awareness and understanding of what they need to do is a challenge when implementing HRM practices...Time can be a barrier to developing specific HRM practices for some employees or teams, especially when we have to deliver a project in a given time”

5.2.3 Innovation

In relation to innovation and its importance to the organisation, high levels of awareness were recognised by managers regarding what value and benefits innovation can provide to organisations. Innovation, as detailed in Chapter 2 (Section 2.2) is central for competition and for meeting customer needs and demands, and it is a survival tool in the marketplace.

There is a wide recognition across the managers that innovation is a gateway to facing intense competition and changes in customers' needs. Additionally, all the interviewed managers shared a common belief that innovation is fundamental for survival in the marketplace:

"[...] without innovation we cannot compete or even survive in this industry. We face intense competition, and innovation is the only way that we can survive through it. The telecommunications industry faces very rapid changes in products and services, intense competition..."
[Interview One].

"Innovation is a condition of survival for our company. This industry, as we always say in our meetings or TV promotions, is based on innovation. Without innovation this industry would not exist. Customers' needs and the intense competition we face and always have faced can be survived through innovation" [Interview Two].

The results show that higher profit, new markets and new customers were identified as potential positive outcomes of innovation. This is expected, as innovation is recognised by organisations as a source of growth and competition. In confirming this, the issue of gaining new customers and creating more profit was raised by the Sales manager:

"Innovation is an important source of profit in many instances. I believe innovation goes beyond profit; it gives us the opportunity to gain new customers and retain our customers"

To achieve innovation, organisations in the marketplace realising its importance in encompassing a number of benefits dominantly in the forms of ability to thrive, compete and survive in the marketplace as discussed in Chapter 2 differ in their characteristics and ability to innovate based on their experiences, market needs, understanding customer needs and the use of technology. In the assertion of this fact, all the informants stated the important role of experience in promoting innovation within the organisation. They stated that experience comes from knowledgeable employees who can

introduce new ideas and develop products, stemming from experience in the marketplace.

Experience can support the innovation process by reducing complexity, minimising time needed for innovation and increasing effective use of networks. For example, two managers from HR and R&D indicated that experience helps in reducing complexity associated with innovation. HR manager provided more details on what can promote and enable innovation. He added that external networks along with experience can enable innovation. He also highlighted the importance of government support and regulations to promote innovation by taxes and patents protection:

“Also, experienced employees play a crucial role in reducing task complexity associated with innovation. The experience we have in the market gives us an advantage in introducing innovation....I think our cooperation with external companies and parties help us in achieving innovation more efficiently...Government support regarding tax and patents also supports our innovation processes”

Similarly, understanding of the nature of objectives and tasks as well as awareness of potential opportunities and challenges can facilitate the innovation process. To confirm this, R&D manager added that in addition to the role of experience in introducing innovation, HRM practices and employees' understanding can positively promote innovation, he stated the following:

“Experience in the marketplace is our main enabler for innovation. Innovation requires a lot of resources and entails complexity, but with our experience in introducing innovative products we feel more confident in introducing innovation... In addition, our HR and HRM are considered as fuel for the innovation process. Through our HRM and employees understanding their roles we can achieve a better flow for the innovation process”

Similar responses were provided regarding experience and its impact on knowledge, whereby knowledge acquisition and sharing support the

innovation process. This was indicated by the Sales manager as he described the impact of experience on knowledge sharing channels and management support for the organisation; this is confirmed by the following statement:

“Experience in the marketplace helps our organisation promote innovation. Also, knowledge sharing and acquisition channels, as well as the support we offer across the organisation, act as a positive enabler for innovation”

The organisational approach to innovation was also highlighted by all managers in the interviews. In this respect, managers claimed that open innovation is more dynamic and able to stimulate innovation for the organisation. Open innovation comprehends more resources and networks that the organisation can use to facilitate and stimulate innovation. To confirm this, results revealed that the managers interviewed acknowledged that they tend to adopt open innovation rather than closed innovation when introducing new products. Open innovation, according to two managers, provides the organisation with additional resources. An example of this is that HR manager indicated the adoption of open of innovation and explained its benefit to obtain more resources:

“[...] we mainly follow an open innovation approach more than closed innovation. Open innovation allows us to acquire more resources...”

However, open innovation is not the only approach that organisations can follow to promote innovation. Other approaches are at the disposal of the organisations, yet organisational settings and capacity to innovate are central in determining which approach they tend to adopt. Market pull and technology push are among these approaches: market pull reflects a process where innovation is stimulated based on customer and market needs, and technology push is referred to as the introduction of innovation based on the use of technological advances and stems from technological inspiration rather than customer needs. Market pull is broadly characterised as being more direct in terms of meeting customer needs and it requires fewer resources, unlike technology push, which requires more resources. For

example, along with an open innovation approach, all the managers mentioned that their organisation follows a market pull approach. They claimed that this approach helps their organisation identify what customers expect and need, in order to develop new products based on these needs. The value of the market pull approach in reducing the time and resources required for innovation was acknowledged by the R&D manager. The following statement confirms the use of market pull approach:

“Our approach to innovation is based on the market approach. The market pull approach I refer to as the shortcut approach to innovation...”

The results were able to identify a number of promoters of and barriers to innovation that occur in the organisation, according to the interviewed managers. Promoters vary within organisations according to their resources, experience and networks. However, knowledge is considered one of the main enablers for innovation. Knowledge is the main source of the ideas that employees offer in addition to developing these ideas into concepts and implementing them as actual final products. Two managers mentioned the importance of HRM policies and knowledge in promoting innovation:

“[...] we rely massively on HRM to achieve innovation. We also encourage knowledge sharing among employees” [Interview Two-R&D].

“I think is HR and any activities related to HRM are important for innovation. In addition, the use of our resources, technology, knowledge” [Interview Three-Sales].

However, the managers illustrated a number of barriers to innovation. They explained that financial resources can be a challenge, as well as identifying a certain budget.

“Our main challenge for innovation is the financial issue... Our main challenge in this respect is that we do not know how many financial resources we need to maintain innovation – it depends on the project” [Interview Two].

As innovation entails various levels of tasks and objectives, understanding the nature of these tasks and objectives is crucial to sustaining innovation. Employee understanding of tasks and objectives can also be a challenge in promoting innovation. This issue was raised only by sales manager, he mentioned:

“Mainly, human resources can be a barrier in some cases, especially when they are not clear about what is expected from them or how to perform their tasks effectively”

Similarly, one manager have expressed his concerns regarding the complexity associated with innovation which can be a challenge. Sales manager stated:

“Given its complex nature and many activities involved in achieving innovation”

The complexity of innovation tasks and the challenging nature of processes can be a barrier to innovation. Coupled with intense competition, organisations may face challenges in promoting innovation. Two informants stated that rapid competition in the marketplace and the complex nature of innovation can be barriers to innovation. Managers of HR and R&D stated the following respectively:

“This is because of rapid competition and the need for more resources and knowledge” [Interview One].

“Also, another challenge is competition in the marketplace” [Interview Two].

As mentioned earlier, innovation is a complex, time-consuming process that requires multiple collaborations between different units within the organisation, as well as dedicated resources. As HRM is fundamental to employees' activities and efforts within the organisation and to their relationship with the management, and as the managers viewed HR and HRM as valuable assets, then it is very likely that they attribute a role in promoting innovation to HRM. In linking HRM practice and innovation, there

was a broad agreement on the positive role of HRM in promoting innovation. All the informants indicated an existing positive linkage that is dynamic for the innovation process. Regarding which HRM practices the organisation adopts in promoting innovation, all managers showed support for the role of HRM practices. Furthermore, across all the participants, the following HRM practices were identified in this regard, namely recognition, recruitment, job engagement and motivation. HR manager identified the following practices that underpinning innovation:

“I will recall here some of our HRM practices that we adopt, such as employee communication, job engagement, promotion, health and safety, recognition, email and internet, absence management, equal opportunities, performance appraisal, employee security, redundancy, motivation, recruitment, recognition and employee relations”

The following practices were indicated by R&D manager:

“I will mention the ones that we focus on and we discuss a lot in our meetings regarding HRM: motivation, recruitment, job engagement, employee development, recognition, employee relations, employee voice, employee development, knowledge sharing, diversity, equal opportunities and absence management. We have been adopting these practices for a considerable period of time, and we see good and positive outcomes”

Sales manager mentioned the following practices to impact innovation:

“Performance appraisals, recruitment, job engagement, absence management, grievances, employee relations, recognition, motivation and redundancy are the main practices we focus on in promoting innovation. I’m sure other practices are important and they add value. But, in our experience, we find that these practices are the most important for innovation”

Interestingly, managers mentioned HRM practices that seemed to be similar to the list of practices presented in Chapter 2. It is crucial to mention that they were not told by the researcher about the practices based on the outcomes

and results from phase one. This similarity might be due to the fact that they had a chance to look at the questionnaire distributed in their departments during phase one. This is very possibly the explanation for this similarity as they mentioned during the interviews that they were interested in the practices in this study and one of them stated that he had the questionnaire in front of him during the interview. The HR manager mentioned a wide list of practices; this might also be for the reason indicated above, as the nature of the work in the HR department made this manager aware of these practices once they were read in the questionnaire.

Managers were asked to indicate the importance and value of the above HRM practices related to innovation. Interesting outcome of the results revealed that all managers show that the expected and perceived outcomes behind adopting these HRM practices are to increase levels of involvement at work, job engagement and motivation. An example of this is what HR manager stated:

“I can tell you generally about the importance of these practices. For example, motivation helps in increasing employees’ loyalty and commitment, reduces the risk of leaving the company and introduces new ideas...”

Identification of HRM practices that may impact on innovation can be affected by past experience and knowledge of these practices, tasks and organisational arrangements. In this line, considering the mechanism that the organisation follows in identifying which HRM practices are needed in promoting innovation, all the interviewed managers expressed the role of experience. An example of this is what HR manager stated:

“Generally, experience has helped us identify which practices are important for innovation. But we revise from time to time the practices if they fit and achieve what we are looking for”

In addition to experience, a wide support for the role of identifying customers’ needs in adopting the specific HRM practices needed to introduce innovation and meet customers’ expectations was acknowledged by all the interviewed managers.

HR manager claimed that feedback from customers supports the identification of HRM practices:

"[...] we also rely on customers' needs and feedback to identify more practices, the nature of an innovation project or a new product"

Coupling HRM practices with the organisational approach to innovation can be a determinant of which practices to adopt. For example, as open innovation requires more networks, organisations following this approach may tend to adopt practices that support communication, knowledge sharing or job engagement. In confirmation of this fact, the issue of open innovation and market pull discussed earlier were linked and mentioned by sales manager:

"As we rely on open innovation customer pull or market pull, we identify HRM practices as those which can create more value to customers and allow our employees to be more open to other networks"

For organisational characteristics, the informants described the role that these characteristics can impose on the work environment. They identified a number of characteristics that are relevant and significant for their organisation.

Interview results revealed that all the managers described performance as being the result of their organisational characteristics, which were viewed as factors that contribute to and develop organisational performance and, as a result, promote innovation. For instance, sales manager acknowledged that performance, culture and structure is the identity of the organisation:

"Without clear targets and the definition of our performance, culture or structure, we cannot have our own identity. There is a clear, direct and indirect relationship between our characteristics and how we do things. Our performance and belief in innovation, for example, depend on our understanding and our employees' understanding of what creates value and advantage"

Similarly, organisational culture can be a supporting driver for innovation within the organisation. Culture plays a major role in determining and identifying what creates value for the organisation, how to deal with challenges and the willingness to take part in a new activity. These tactics are contained in what employees believe in and assume that form at the end their organisational culture. The results show that there is wide agreement and support for the importance of organisational culture in creating a suitable environment for innovation within their organisation. The managers stated that culture is a result of what employees believe in regarding what is important and what adds value to the organisation.

An example of this what HR manager stated that culture is about what employees' belief in innovation and assumptions:

"[...] culture summarises employees' beliefs in innovation, creativity and assumptions of what creates value"

Two managers mentioned the role of organisational performance in sustaining innovation. Organisational performance was identified by the informants to have an impact on the quality of products and the ability to achieve customer satisfaction and make a profit.

According to HR manager, performance is central for the quality of products:

"Performance is essential for the quality of our products"

The issue of gaining customer satisfaction was considered by R&D manager where he mentioned that organisational performance enables the organisation to introduce quality products and maintain customers' satisfaction. He also added that organisational performance can enrich financial position of the organisation:

"Performance represents our ability to achieve customer satisfaction and the quality of products, which can also enhance our financial profit as well"

Knowledge, as discussed earlier, is the source of ideas and solutions. Therefore, organisational knowledge is expected to play a main role in

introducing innovation. The quality of new products, the time needed and the level of complexity are all linked and affected by the ability to acquire knowledge at all levels. For example, knowledge was identified by two managers as playing an important role in supporting innovation processes through introducing new ideas, facing challenges and reducing complexity. The following statement confirms this fact stated by HR manager:

“Knowledge helps our employees in developing new ideas and reducing complexity. We also encourage our employees to exchange their knowledge and ideas with others”

Another aspect of knowledge was identified by one of the managers. The role and importance of unique knowledge in acquiring innovation and reducing complexity was indicated by the R&D manager. In addition, knowledge sharing is considered by this manager to have an impact on employees who perform tasks and involved in innovation:

“Knowledge, for example, helps in sharing knowledge and acquiring the knowledge necessary for innovation. In many cases, unique knowledge is shared with employees, which can support innovation and reduce complexity”

Levels of autonomy and freedom at work are considered to increase employees’ levels of commitment and involvement at work and thus increase their ability to introduce new ideas and tackle challenges. To confirm this, two informants indicated the roles of employee autonomy and freedom at work in increasing levels of commitment and confidence and reducing complexity. The degree of freedom and flexibility at work to reduce complexity were raised by HR manager:

“Structure represents for us the degree of freedom and flexibility in the organisation. We believe that a flexible structure, and giving employees a high degree of freedom at work, helps them to be more committed. Also, through this approach we aim to reduce the complexity associated with innovation”

Another positive claim by the R&D manager indicated that organisational structure plays a role in supporting employees' activities and asks performance were highlighted by R&D manager:

“Organisational structure supports employees' activities and the nature of their tasks, whereby they are given freedom and self-administration at work”

A number of enablers and promoters of organisational characteristics were identified by the informants. The results revealed that the managers identified the promoters and enablers of organisational characteristics: two informants indicated the role of management and HR in developing organisational characteristics. They highlighted that employee understanding of what is expected from them and cooperation with management help in this respect. As the managers conceived of HR as a valuable asset for the organisation, it can be expected that HR also plays a role in organisational characteristics; that is, when HR is directed towards enhancing employees' efforts and activities to understanding of what is required from them, then it is expected that organisational characteristics and other aspects of the organisation such as HRM will be developed. For example, according to R&D manager, employees know what is expected from them in many cases and that cooperation and support by the management promote organisational characteristics. He added that also feedback from employees and suggestions for improving the workplace

“Organisational characteristics are placed within our employees and management. By saying this, I mean that our employees know what is expected from them in many cases and show high levels of cooperation with management decisions in most cases. Management also design the organisational structure and characteristics that suit our organisational nature and mix of employee skills... We also ask our employees for continuous feedback and suggestions about what can improve our organisation and the workplace”

HRM and innovation are both valuable sources of knowledge, growth and performance development. They entail strategic choices and activities that

enhance the overall characteristics of the organisation in different units. These issues related to HRM and innovation were raised by sales manager. In addition, results revealed that annual assessment of objectives and characteristics help in developing organisation characteristics:

“I think this is related to both innovation and HRM. Our characteristics are supported by our HR, HRM and innovation capacity. Management support and annual assessments of our objectives and characteristics also help in adapting to changes or resolutions to our characteristics”

HR manager mentioned the role of experience in promoting organisational characteristics and developing them accordingly. He claimed that experience in managing the organisation and support from headquarters help in organisational characteristic development:

“Experience in managing the organisation, as we have the support of the main headquarters to adapt to new changes and support administrative decisions. Also, we hold annual sessions to revise our approach to performing tasks. Performance and structure are supported by HRM practices that can identify job characteristics and design as well as acquire more skills and knowledge”

However, managers were asked in the interview to identify barriers and challenges to organisational characteristics. The results revealed that identifying customer needs and market demands can be challenging when looking to develop organisational characteristics. In the information gathered from the interviews, all the interviewed managers indicated that customer satisfaction and needs can be a barrier to organisational characteristics. Meeting customers' satisfaction necessitates a collaborative effort and a well-designed set of practices and arrangements within the organisation to meet their needs. An example of this is as stated by HR manager:

“I think the main challenge is about identifying customers' needs and satisfaction”

Additionally, R&D manager stated that understanding customers' needs can be time-consuming. He also expressed that the level of autonomy employees

have can be a barrier to organisational characteristics. Management needs to offer a supportive and balanced environment for the employees, regarding autonomy, training, payments, rewards and other forms of managerial activities connected to employees. The following statement confirms this by R&D manager:

“For instance, defining customers’ needs sometimes is time-consuming and also requires more resources...Also, when we implement a specific organisational structure, some employees may feel uncomfortable or still need higher levels of autonomy, which can sometimes make them less motivated. Some of them come to my office to complain, and some of them take some days off when they do not like the changes”

Issues related to culture was indicated by HR manager. He claimed that culture can be a barrier to organisational characteristics, since it is vital for other characteristics of the organisation. Culture according to HR manager can be supportive of innovation but it needs time to shape and develop a desired culture:

“I think mainly culture is crucial to our organisational characteristics. I strongly believe culture can help us to develop the rest of our organisational characteristics. It is almost impossible to acquire an organisational culture supportive of innovation in the short term”

In linking HRM and organisational characteristics, managers expressed their realisation of the relationship and linkage between these two organisational activities. When HRM provides a pool of practices that develop employees’ skills, knowledge and abilities, then improvements in organisational characteristics at a higher level are expected. For example, the organisation might create value through the recruitment of talented, skilled and culturally aware employees. Results revealed that two managers mentioned the role of skills and knowledge in creating and affecting organisational characteristics and, as a result of HRM, practices adopted by the organisation. For example, HR manager indicated that HRM in developing skills and knowledge that can support organisational characteristics:

“Which can be achieved through effective HRM practices that support their knowledge, skills, and abilities”

In similar tone, another manager indicated that the organisation identifies its characteristics based on HR linked directly to HRM. In addition, R&D manager mentioned the role of HRM in creating productive and motivated employees that can form organisational culture, performance and knowledge:

“So, if we develop our HR to be more productive, motivated and skilled, we will eventually end up with characteristics for the organisation that can help us compete better. And in many cases we define our characteristics based on what we have in terms of HR and their abilities... Our HR creates who we are as an organisation, and therefore the organisational structure in some way reflects our HR. We need to manage our HR carefully and professionally through HRM practices. And that’s what we are doing”

Interestingly, there is a broad support and agreement by all managers from the three departments in prioritising HRM over organisational characteristics as having an impact on innovation. The role of HRM was crystallised by all of them as developing employee performance and abilities and in turn to promote innovation and create value. To confirm this, HR manager claimed the following:

“All in all, I would say HRM is more important, since it has a huge impact on employees’ skills and ways of doing things. Without HRM, we lose the compass I think on what and how to create advantage, value and boost the performance”

The direct impact of HRM on employees was mentioned and acknowledged by sales manager:

“I think HRM has a more direct impact on employees’ performance and abilities”

5.3 SUMMARY OF THE INTERVIEWS

Informant One highlighted the importance of HR for developing performance and abilities. In identifying organisational approach for HRM, this manager acknowledged that his organisation adopts a holistic approach towards HRM by adopting a bundle of practices. A number of HRM practices adopted in the organisation were identified. Lack of experience and management change is highlighted by this manager as a challenge for HRM practices. For interviewee One, open innovation approach is adopted to bring radical changes in the new products. This manager prioritised HRM over organisational characteristics in benefiting the organisation and innovation process. Management turnover is highlighted as a challenge for organisational characteristics according to this manager. For innovation, informants One, Two and Three indicated that their organisation adopts open innovation approach and market-pull approach. For interviewee One, open innovation approach is adopted to bring radical changes in the new products. In respect to organisational characteristics, none of the managers identified or ranked specific organisational characteristics, rather, they tend to be general in explaining its relevance and importance. For Interviewee One and Two, HRM is conceived as enabler for organisational characteristics. Interviewee Two indicated similar response to the value of HR as stated in interview one. Similar with interviewee One and Three, adopting a bundle of practices was mentioned by this manager. He also identified a number of practices that the organisation implements as presented in the results above. Across all the informants, a challenge for developing HRM practices is the gap between expectation and real purpose of HRM practices. For organisational characteristics, this manager provided more positive response for its importance and value to the organisation; he called for a mixed approach to sustain innovation by aligning organisational characteristics with HRM and other resources.

Interviewee Three acknowledged that the value of HR stems from its ability to develop qualified employees and competition in the marketplace. He referred to HR as employees not as functions which is unlike to what managers in interviews one and two claimed. Within the practices identified, only performance appraisal across all the managers was shared and found to be

similar. The value of innovation for competition was highlighted and mentioned by all the managers. A promoter of organisational characteristics according to this manager is mixed employees from different backgrounds. On the other hand, resources and time needed to develop organisational characteristics are considered as challenges.

5.4 INTERVIEW RESULTS: EMPLOYEES

This section will present the results of the interviews with employees. As mentioned earlier, in total seven interviews were conducted with employees within the departments of HRM, sales, R&D, and Product development. The participation rate of departments was as follows: two employees from HRM, two from Sales, two from R&D, and one participant from the Product development department.

5.4.1 Renewal Process and Market Needs

Employees were asked questions regarding innovation and the contribution they make in this regard and to its processes. The value of innovation as a renewal process for organisations was broadly recognised by all interviewees, who expressed a shared belief in the importance of innovation for renewing the organisation. They conceptualised their role as understanding market needs and customer demands, which was expected, since employees are sources of ideas, creativity and information sharing. Furthermore, they are the cornerstone of any innovative activity and process. In addition, changes hoisted onto existing products and services with respect to how incremental or radical they may be are implemented by employees. The ability to compete in the marketplace, enter new markets and understand the needs of customers is one of the central activities of sales and R&D department employees. In line with the rapid and intense competition prevalent in the telecommunications industry, the rate of existing product and services renewal is expected to be more of a dynamic state.

For example, one of the employees in the R&D department claimed that their main task lies in the renewal process of the organisation and what it offers to customers and markets:

“The way I contribute to innovation is considered one of the major in innovation. In my organisation, R&D is at the heart of any changes or renewal and the things we offer to customers” [Interviewee One, R&D].

Similarly, one of the employees in the sales department indicated that their activities and contribution to innovation are seen as the cornerstone, and ideas and changes to products and services are the main tasks they undertake to promote innovation, as confirmed by the following statement:

“I believe that we as employees are the cornerstone of innovation activities. My colleagues and I offer ideas, solutions and modifications to existing products or services. For me, their commitment to innovation and understanding its importance is one of the major contributions to innovation, because this is a trigger to what’s next, what changes to make and what to offer uniquely”.

5.4.2 Open innovation and market pull

In respect to the approach adopted to promote innovation, all of the informants indicated that they follow an open innovation approach. Likewise, the market pull approach was stressed by employees as being adopted as a strategy to introduce innovation into the organisation. A shared perception by employees in this regard is that the value of open innovation enables them to access new knowledge, assets, resources and information that would otherwise be beyond the boundaries of the organisation. The organisation can then apply its own knowledge, experience and resources to cope with changes imposed, by inserting new resources and assets, which can then enable further enhancements and unique modifications in new products and services. This entails complex processes and stages, demands various resources and, in most cases, is regarded as a time-consuming activity.

Idea generation, problem-solving and identifying customers’ needs can be supported through the use of external networks and by introducing changes based on market needs. As a result of serious competition and rapidly changing customers’ needs, organisations ought to secure their path, not only to introduce innovation, but also to develop successful advances that

can produce profit, growth and customer satisfaction. Additionally, outperforming competitors is crucial for organisations, and the use of open sources and market approaches can reduce the perils associated with underperforming or competing. As an example, one of the employees in the product development department stated, that open innovation allows for acquiring additional resources and can reduce the complexity associated with innovation:

“I am involved in and I recommend ways to my line manager to follow open approaches. From my experience, innovation requires a lot of resources and time, but accessing external resources and networks eases this process, saves us time and reduces the complexity of innovation”.

Open innovation is characterised as a facilitator of improvement – as asserted by an employee in the R&D department. The use of external resources and knowledge that the organisation does not possess is likely to develop the propensity to increase employees’ capacity to innovate, as noted in the following statement:

“I perform tasks that rely on an open innovation approach. The value of this approach is that it facilitates the innovation process and helps us acquire extra resources that are beyond our hands and abilities. In some cases, when I request assets or knowledge that the organisation does not have or cannot acquire, we use the open innovation approach to do so”.

The constructiveness associated with the market pull approach, as well as the beneficial anticipated outcomes and rewards of this approach, culminate in identifying needs and changes in the market, as stated earlier. This is expected, as the telecommunications industry in Jordan is facing rapid changes regarding customer needs. In addition, the implementation of the market pull approach with open innovation allows for the more effective use of acquired resources and knowledge, and it is expected to increase levels that help sustain radical innovation. Coupling open innovation and the market approach is likely to generate higher levels of authenticity and legitimacy in

new products. A fundamental gain in coupling market pull and open innovation is the enabling of radical innovation, which is essential in a competition-intense industry in which needs in the market change rapidly. An interview with an employee in the sales department stresses the abovementioned significance of the open and market pull approaches:

“We also follow the market pull approach here in our department. As I work in the sales department, we are directly in contact with customers and provide recommendations to our management about market needs – it’s less complex than the technology-led approach. Open innovation and market pull approaches are of great support to us when introducing radical innovations”.

A similar assertion when interviewing R&D employee was claimed:

“Along with that, we adopt the market pull approach to meet customers’ needs and understand what sort of changes we need to add or alter”.

The responses indicate a common awareness and perception of innovation and the approaches adopted to promote it accordingly. During the interviews, a number of participants confirmed this observed pattern by stressing the work relationship and collaboration with other departments. A major contributor to this is the organisational atmosphere and working climate. Organisational atmosphere entails communication and relations with colleagues and other departments, and it is considered an antecedent for innovation and creativity. Fundamentally, the complexity associated with innovation demands the support of existing resources and channels and the use of collaborations to access external sources of knowledge and resources.

The introduction of minor and major changes is achieved by employees collaborating with colleagues in other departments or units of the organisation. Idea transformation and implementation can be done together through bridging departments and working units. In this respect, an interview with an employee in the product development department indicated that

collaboration with their R&D counterparts is essential in promoting innovation, which confirms the collaboration and support of other departments in the organisation to deliver innovation. The employee stated:

“As I mentioned, the department I work in works jointly and closely with the R&D department to produce both minor and major changes. So, my department is dynamically involved in innovation”.

A similar level of awareness was offered by an employee in the R&D department, where the transformation of ideas into products is done through the collaboration of other departments:

“Nowadays, innovation requires collaborative effort and coordination from different departments. For us, we gather all the information and effort to translate ideas into actual useful products or services. This transformation and the implementation of ideas are the core job requirements of my department”.

5.4.3 Motivation and Commitment

The significant value of HRM practices is perceived as wide-ranging and significant to the performance of an organisation. HRM practices, as discussed earlier in Chapter 2, are likely to advance the performance of the organisation at the macro level and increase levels of skills, knowledge sharing, abilities and the use of resources at the micro level of employees. Organisations differ in their responses and capacity to innovate, due to a number of factors such as employee abilities, talents, skills and the application of these when using existing knowledge and resources. As each organisation has its own unique approach, the purpose and importance of organisational activities and arrangements, specifically HRM practices, tend to differ in order to support the vision and aims of each individual business. Across the interviews, the employees demonstrated high levels of shared awareness and understanding of the value of adopted HRM practices involved in increasing levels of commitment, involvement and motivation. They claimed that they perceive HRM practices as likely enabling them to perform innovation-related activities, face challenges and be more engaged.

According to one employee in the sales department, HRM practices promote engagement and empower an innovative spirit:

“I perceive these practices, as I mentioned, as being able to motivate me to be more capable of facing challenges and being more creative. There is also a shared value of these practices, by which I mean the bundle of practices that I am subjected to, in total they all add up and have an impact on my commitment to innovation and to my organisation. I feel I have no excuse not to be engaged in innovation”.

The multifaceted aspects of innovation demands, in addition to developing engagement and motivation levels, the effective collaboration of employees in other departments, in order to share information, support creativity and create an awareness of what can generate value. Employees perceive HRM practices as enabling them to collaborate, which was highlighted by an employee from the product development department:

“They help in working more effectively with other departments, and making me more engaged and motivated to perform my tasks, all of which is important to me in performing my tasks and being more creative and confident”.

Employees are effectively engaged in innovation and task performance through the use of their skills and abilities. A fundamental antecedent for innovation is to have a set of skills and abilities that are valuable and can create value. Moreover, RBV theory and the SCA framework for competitive advantage indicate that rare, valuable and inimitable resources are the main drivers of competitiveness and are linked directly with innovation. Developing the desired levels of skills and abilities can be maintained through HRM practices. In an industrial era branded as rigorously competitive, success in developing innovation competences lay hugely on the skills and abilities of employees.

In this line, developing levels of skills and abilities were mentioned by some interviewees. For one employee in the HRM department, rewarding efforts expended to accomplish tasks, and broadening the networks needed to

introduce innovation, was one of the main values of the adopted HRM practices, in addition to the development of skills and abilities:

“Also, these practices tend to recognise and reward the efforts employees put in at work. These practices are also aimed at me – I see their value in increasing my skills and ability to innovate and think differently, therefore broadening my scope of networks and connections within the organisation and across the industry”.

Deliberately implementing a set of HRM practices is linked with organisational goals and objectives proposed by management. It remains significant for innovation to be fuelled by HRM practices. Yet, employees' perceptions of HRM practices might lead to different outcomes, so in order to achieve desired levels of motivation, engagement and commitment that can develop employees' spirit to innovate, a consideration of their needs – and their perceptions of HRM practices – appears to be vital. In this regard, a specific set of HRM practices can be beneficial for employees. When asked about HRM and innovation, informants showed a shared awareness and offered positive responses. All of them were able to perceive a number of HRM practices that influence innovation. For instance, as indicated by one employee from the R&D department, the following practices are adopted:

“In line with the nature of the tasks I perform, the practices that are relevant to me are: training, job engagement, employee development, employee relations, consideration and respect, sharing of information and knowledge, motivation, rewards and communication” [Interview One, R&D].

For HRM department employee, the following practices can create value for innovation:

“[...] training, job design, performance appraisal, recruitment, engagement, motivation, development and absence management. There are other practices, but for me I think these practices are more valuable and relevant to innovation”. [Interview Two, HRM].

Within the sales department, one interviewed employee highlighted the following practices:

“There are many practices that I perceive as beneficial and important for innovation, such as training, engagement, motivation, training, rewards, health and safety, appraisal of my performance, job design, employee security, retention and development”. [Interview One, sales].

A product development employee indicated the following practices:

“There are a lot, such as engagement, training, relations, design of jobs, development and appraisal”.

Employees' perceptions of HRM practices suggest a degree of similarity across their responses. This might be due to that employees perceiving practices as expecting certain outcomes as they perform tasks at the micro level. Additionally, this might shed the light towards some forms of homogeneity in perceiving HRM practices as valuable for innovation. Across the interviewed employees, a positive support in the form of shared perception for training, recruitment, health and safety, engagement, communication, job design and sharing information were among the practices indicated by employees. It appears that these practices support the claims by employees that motivation and commitment are crucial elements of HR systems. Nevertheless, despite that employees share some similar practices, the interviews revealed that, across employees, a dimension of dissimilarity does exist for other practices. Examples of these practices were like absence management, discipline and grievances. For R&D discipline was perceived as valuable which can be as a result of the nature of jobs in R&D. Likewise, grievances was identified by an employee in sales department, and can be linked with being a front line employee dealing that might demand some aspects of grievances shall a conflict arise.

Besides motivation and commitment being developed by HRM practices, the organisation is likely to have other factors that can contribute to the introduction of innovation and, more decisively, the capacity to innovate. This capacity is hosted by the organisational climate, which moulds specific

arrangements and settings. The principal constructs in organisational climate involve structure, culture, performance and knowledge. The internal environment in which staff interact plays a central role in signifying their efforts, performing tasks and developing levels of awareness relating to innovation.

Moreover, a healthy organisational climate enables employees to introduce new ideas and be recognised and rewarded for their efforts. To sustain innovation, the use of networks – specifically in the case of open innovation – requires a flexible structure that allows members of the organisation to enjoy certain levels of autonomy and freedom. Organisational culture, in the same vein, holds the beliefs and assumptions that employees have regarding the importance of innovation, value creation and competition. Additionally, the knowledge and performance of the organisation consist of pools from which to share knowledge and apply it to introduce products and services that customers expect. The responses claimed by informants show positive support for and recognition of organisational climate in relation to the motivation and commitment of employees to innovation. Unique and difficult to imitate qualities of the organisation, as noted by the resource-based view theory, contribute directly and significantly to the dynamic capability of the firm.

Organisational climate enables the organisation to read signals in the marketplace effectively and allow employees to offer appropriate suggestions and changes to existing products and services, to meet market needs. This was confirmed by an employee in the R&D department:

“Organisational characteristics are supportive of the general capability and appetite for the organisation in the market to absorb signals by competitors and customers. This is important, as the organisational settings will be more in the context of supporting innovation and allowing innovation to happen. This means that our organisation is committed to innovation, being different and believes in its employees, which I certainly feel”.

Despite the assertion on the importance of organisational climate to innovation, interestingly, one of the interviewees revealed this not to be the case. He added that this is due to the climate being inherent in the organisation rather than associated with employees, and it cannot be modified to support changing demands or a turbulent environment. An indirect impact of organisational climate and innovation was mentioned by an employee in the HRM department, in that he prioritised organisational structure over other characteristics of organisational climate as being of relevance to innovation:

“For organisational characteristics, their importance and relevance to innovation do exist, but indirectly from my point of view. The more direct impact is from HRM practices, as they can be changed and modified in a quicker manner than organisational characteristics. Organisational characteristics can be general for innovation, as they are not very specific or targeted to specific employees, whereas HRM practices or financial rewards and recognition are more recognised and effective for individuals here. I think that amongst the characteristics of the organisation, structure is the central one to innovation, as it allows employees to perform tasks flexibly and enjoy easy communication with their managers”.

The indirect impact of organisational climate on innovation was due to the fact that, to a certain extent, HRM practices are more rewarding for innovation, according to this employee. His main point was that HRM practices can be adopted and modified based on the competition as well as changes in the marketplace and complexity associated with innovation:

“Organisational characteristics are, even if they are planned to be designed in a specific way, greatly affected by the individuals in the organisation. For example, the organisation, when seeking to promote an organisational culture that supports innovation, ensures that employees believe in the value of innovation and are oriented towards it, and here, individuals are very central to this issue. If they do not believe internally in the value of innovation and its importance, and the

need to cope with the market's needs, then the organisational culture will not be that vital or influential. So, I think and from my experience in this department and in the organisation, it's more that HRM practices are capable of supporting innovation compared with organisational characteristics. We redefine, redesign and implement practices based on the needs of employees and raising any challenging or complex issues – that's the power of HRM practices, which can then support and fix tasks and the progress of employees here". [Interview One, HRM].

On the contrary, an interviewed employee from the HRM department perceived a positive impact of organisational climate on innovation. The use of knowledge and sharing of information, in addition to a flexible structure, was viewed as an enabler for innovation:

"I think organisational characteristics here create a friendly environment to innovate and to be motivated. The mixture of performance, studying market needs, sharing knowledge and the existence of knowledge-sharing panels, in addition to the flexible structure in the organisation, all help to support and promote innovation" [Interview Two, HRM].

A somewhat mixed response to HRM practices and organisational climate was indicated by a sales department employee:

"It's a mixture, to be honest. There is no one and only factor that supports innovation. But, in terms of which ones support innovation more, for me, its HRM practices, because HRM practices can be modified, implemented and are more effective at any time while we perform a task or are engaged in a project. Given the complexity of innovation, I think I need more adaptive and adjustable on demand, shall I say, practices, or even practices that enhance my existing skills. For organisational characteristics, that is not the case. For me, I think they are for the long term and not when I am engaged in innovation or another activity. However, even though they might be engaged already, HRM practices can fuel innovation more directly and

effectively, at least that's me and I think that's the same for my department".

Organisational climate is developed through several arrangements and efforts made by organisations to achieve their objectives. This indicates that their significance is likely to be fruitful in the long term. This view was shared by an employee in the R&D department:

"It's the HRM practices that I feel and perceive to be more relevant to and supportive of my tasks. Organisational characteristics are more beneficial for long-term policy and orientation. In my job, I face many changes that require support from HRM practices"

As innovation is associated with change on a constant basis, implementing HRM practices when needed may have significant effects on innovation in comparison to changing or developing the characteristics of the organisational climate. This becomes particularly critical in view of the time factor, if delays happen, or success in the case of being the first to market an innovative new product. During an interview with product development employee, this perception was shared:

"To a great extent, I believe and perceive that HRM practices are more crucial to the nature of the tasks I do. With any challenges we face here, HRM practices support our ability to work under pressure and complete complex tasks. They also can be targeted and designed to promote specific sets of skills or individual abilities, which I think is very necessary for innovation, while organisational characteristics are more for the general atmosphere, the organisation as a whole".

Barriers and enablers to HRM, innovation and organisational climate can originate from organisational resources, management, competition, the external environment, employees and how they perceive these dimensions. The ability to introduce innovation and the rate of innovation varies among organisations due to the above factors. In attempting to understand this, employees were asked about challenges and promoters to HRM, innovation and organisational climate. Employees were able to describe what they

consider as a challenge and enabler in this respect. A common challenge of HRM practices for employees is understanding the nature of the practices, which can be explained as the gap between the real purpose of the designed HRM practices and the expectations of employees regarding these practices. HRM practices are subject to a wave of interactions and understandings, which refer to the process through which employees perceive these practices, management implementation and the possible impact of practices on each other. Potentially, the way employees perceive HRM practices affect the outcome or the original intended purpose of these practices as designed by the management. For example, according to two employees in the R&D department, the failure to understand the objective of some HRM practices is challenging:

“I feel that I understand and realise their values and objectives, but they seem to be different. I expect some practices to promote some aspects of work-related behaviours, but in reality I have found that the purpose was different, either somewhat in some cases or considerably in others” [Interview One, R&D].

“Understanding some HRM practices can be challenging, and I expect from some practices to promote features that are different from the real purpose” [Interview Two, R&D].

Possibly the nature of tasks given to employees creates, in some way, ambiguity regarding the real or intended purpose of these practices. Moreover, gaps between employees can also contribute to unwanted or planned effects of HRM practices. Employees in the HRM and sales departments expressed this perception as follows:

“Different tasks and the different nature of these tasks make it tricky to design and implement some practices. From my experience, I also think that the gap between employees and the real purpose of the practices designed and framed by management make it challenging for HRM practices” [Interview Two, HRM].

“There is a challenge regarding HRM practices, namely the nature of the tasks and their changing nature, which makes the ability to adopt different HRM practices to support these changes kind of challenging. I sometimes find it difficult or it takes me time to understand the nature and aim of some practices” [Interview Two, sales].

When employees were asked about what they perceive as challenging to innovation, rapid changes in the market and the various resources needed to introduce innovation were among the main barriers. This is due to the intense competition in the telecommunications industry, in which a number of main players compete. This in turn challenges others to acquire and obtain new customers and profit. In such a competitive environment, being a first mover in the market is crucial for innovation, and so time is a key factor, as it can allow for securing a great deal of market share, new customers and an enhanced reputation.

When interviewing the employees, there was a shared awareness regarding the identification of time, resources and competition in the marketplace as barriers to innovation. According to an R&D employee:

“The time we need, and I think this is expected and normal, to introduce innovation is challenging. Also, when we acquire some knowledge or resources from outside, it can be challenging to understand how to implement them and make the best use of them”.

An interviewed employee in HRM provided a similar statement:

“Rapid changes in the marketplace and the different resources needed for innovation”.

Employees' willingness to contribute to innovation can be a challenge, as they are the main source of ideas, creativity and knowledge, and so their willingness to innovate is essential. A response from one employee in the sales department indicated that their willingness and attitudes can affect the introduction of innovation:

“Sometimes, I’m concerned about the participation of other members in my department in relation to how they can support innovation and if we are on the same page while performing a specific task. There are always challenges in innovation, as it’s a complex activity”.

As organisations are surrounded by external players, regulations, globalisation and uncertain demands, this can create a burden that might affect organisational climate. The informants shared their worries regarding the external environment and technological advances threatening their organisational climate. A sales employee indicated the following:

“I can tell you that the challenges and changes I see at work, and the dynamics of the market, make it challenging to modify the characteristics necessary to support my activities”.

In a similar vein, an R&D employee mentioned:

“I think the outside environment can be challenging when looking to develop organisational characteristics, as the environment is subject to constant changes”.

Management support and collaboration, if not perceived as effective by employees, can create a challenge to the organisational climate, the perception of which might be negative and less constructive when employees lack the support of and collaboration with management, especially in relation to organisational objectives as whole. An assertion in this regard was mentioned by an employee in the product development department:

“The challenge here, I think, is that we need more management support to design characteristics that support the vision and mission of the organisation but at the same time take into account employees and their differences in terms of understanding the purpose and expected outcomes of some of these features”.

The informants were also questioned regarding what can enable or promote HRM, innovation and the organisational climate. A mutual identification of management support was highlighted in this regard. Responses indicated

that that employees perceive management as guides in helping them understand what to utilise to innovate, as management are aware of the resources and effort required to support innovation. Additionally, management can enable collaboration between different units and departments within the organisation, which in turn supports information sharing, knowledge flow, time needed to introduce a new idea and reduce levels of complexity that employees may experience in the process. Experience plays a major role in delivering innovation and understanding HRM, and it contributes to developing the organisational climate. The ways resources are used and able to create value, and employees' adaptation to changes, are accumulated through experience preserved within employees.

In line with this notion, two employees in the HRM department stressed the issue of management support and communication, and one of them mentioned that the experience they have in HRM is a promoter for HRM as follows:

"I think we have experience in HRM practices and receive support from management, which can all be of value for HRM. The fact that we realise the differences between employees in terms of understanding HRM practices, and making sure they really get what the practices are designed for, is supportive of HRM" [Interview One, HRM].

"Support from management in implementing and understanding the fact that employees differ in their understanding of some practices" [Interview Two, HRM].

For the R&D department and employees in other departments, the same observed pattern was indicated. However, some stressed other issues, such as the support of the HRM department. This is the case because R&D individuals are innovation-focused and they require support on different HRM practices that might differ from those required by employees in, for instance, the sales department as a result of the nature of the tasks they perform. A similar indication was highlighted by an employee in the product development department, where an understanding and awareness of the value of HRM

practices in terms in improving performance, and a willingness to understand and engage with HRM practices, is a promoter thereof:

“I think that employees’ willingness to understand HRM practices, and their understanding of the value of these practices and what they can offer to enhance their performance, creates important support for HRM practices” [Interview One, Product development].

“Communication with management is really important for HRM practices. Their understanding of our needs and that our tasks have some levels of complexity make the process of developing HRM practices more effective” [Interview One, R&D].

The experience of performing different tasks and adopting various HRM procedures can be a promoter for HRM practices – a perception mentioned by an employee in the sales department:

“The fact that I deal with many tasks that require different practices, and I imagine many of my teammates are the same, makes the adoption of HRM practices more understandable and valuable. I also ask my manager if I don’t understand the nature of some practices. Management support is also important in this regard” [Interview Two, sales].

In relation to innovation, the interviewed employees identified that experience is a crucial promoter of innovation, which is expected, as innovation entails a series of activities and a combination of different resources and assets to enable it to happen. Moreover, employees’ capacity to innovate is perceived as an antecedent to innovation, which can be acquired and developed through subjecting them to different associated activities that build their experience.

The interviews show that employees in innovation-focused departments are aware of their coordination and collaboration with other departments. This can be due to the continuous support and complexity that innovation involves. Along with experience, collaboration with other departments and the

use of open innovation can facilitate the process. In this line, a product development employee stated:

“The experience we have here, as well as coordinating efforts regarding innovation with other departments, promotes our ability to introduce innovation”

A parallel indication was mentioned by an R&D employee:

“The coordination between different departments facilitates the innovation process” [Interview One, R&D].

The use of open resources to enable employees to introduce innovation can be advantageous. The use of channels with external suppliers and even competitors for collaboration can produce ideas, knowledge, resources and save time consumed to develop new products or services. In addition, radically new products or minor improvements to existing products, when using open resources, can be less complex. HRM and sales employees showed mutual agreement and support for the use of the open innovation approach in driving innovation. The value of open innovation and using external resources to innovate is of critical importance for the organisation, especially in times of intense competition, rapid changes in the market and meeting customer needs.

According to two employees in the sales department, the following confirms the role of open innovation and external resources:

“For me, it’s the experience in innovation and understating customers’ needs. I think being open to the external environment, as well as following a market-led strategy to innovation, helps me a lot in contributing to innovation” [Interview One, sales].

“I think the experience I have, and that of other employees, makes us familiar with innovation and what to expect in many scenarios. I also consider that I’m engaged in open approaches to innovation and in contact with customers to help support innovation” [Interview Two, sales].

Interestingly, an employee in the HRM department mentioned the role of HRM practices in promoting innovation. In addition, an awareness of the importance of innovation was also highlighted:

“The practices of HRM that we adopt are enablers for innovation, the dedicated teams and commitment by employees here and the belief in the value and importance of innovation” [Interview One, HRM]

The employees also identified promoters of organisational climate. For most of them, job design and a flexible structure were among the main elements in this regard. The characteristics of an organisation are formed ostensibly by its individuals; therefore, when employees are committed and engaged in the practices they perform, it is expected then the characteristics to be of supportive form for the organisation. In the telecommunications industry in Jordan, the level of freedom given to employees enables them to be more productive in introducing innovation and contributing to organisational objectives. The design of jobs that help employees' perform tasks well allows for greater absorption of knowledge and increases their capacity to be more efficient, especially when following market approaches and open innovation. This can develop the organisational capacity to develop certain traits. In confirming this, R&D employee stated the following:

“The designs of jobs in my organisation allow the implementation and effectiveness of organisational characteristics to be more beneficial” [Interview One, R&D].

A similar assertion was highlighted by an HRM employee:

“For this, the design of jobs here and the flexible nature of the way in which we are encouraged to perform tasks enable the characteristics and especially the structure and knowledge to support us more” [Interview Two, HRM].

Diverse individuals in the workplace can create positive attitudes and offer contributions to the organisational climate. The sharing of knowledge, building a culture and assumptions held by employees towards innovation and enhancing performance can be sustained by taking them from different

backgrounds. Orange Jordan is an extension of the French telecommunications company France Telecom, thereby increasing the possibility of diversity in the workplace. This diversity can be geared and effectively exploited towards creating benefits and competitive advantage. An interesting realisation of the role of diversity and the variety of employees was highlighted, interestingly, by an employee in the sales department. The willingness to accept change was also perceived as a promoter of organisational climate. This is supportive of the notion that management are likely to propose changes from time to time, to meet the demands of the market and be more competitive:

“I think the variety and diversity of employees in my department play a great part in supporting organisational characteristics. Many of my colleagues and I are willing to accept –and expect – change from time to time, which I feel the structure of the organisation helps in accepting and adapting to change” [Interview One, sales].

Being competitive, seeking better performance and being different in comparison to competitors allow the organisation to have a mixture of unique components that contribute to its climate. One of the informants in the sales department shed light on being different in the marketplace and in relation to competitors, thus supporting organisational climate:

“Understanding the value and need to be different in the marketplace, I believe, is a big promoter of organisational characteristics.” [Interview Two, sales].

5.5 SUMMARY OF THE INTERVIEWS

In describing the contribution to innovation, interviewee one in the R&D department stated that innovation is his major task as a member of the R&D department. In addition, he claimed that his involvement in innovation entails the adoption of an open approach along with the market pull approach. The R&D department is directly involved in innovation, according to this interviewee, through developing ideas, transforming ideas into actual products or services and collaborating with other colleagues. In relation to HRM, this employee indicated that HRM practices are perceived to promote

innovation through promoting skills and abilities. Moreover, HRM practices are perceived to reduce complexity associated with innovation by increasing levels of engagement and motivation at work. Practices perceived by this employee to promote innovation include training, job engagement, sharing information and motivation. For all employees, the perception of HRM practices to promote innovation involves increasing levels of commitment, motivation, skills and abilities. Organisational climate is perceived as providing indirect support for innovation; however, this employee highlighted that organisational structure is valuable in creating competitive advantage. However, his colleague in the same department claimed that the organisational climate is effective in terms of allowing him to read signals in the marketplace and identify customers' needs. Collaboration with other departments is perceived to be a promoter of HRM, while experience can develop the introduction of innovation. Similar to his colleague, the value of HRM practices is perceived as being able to increase levels of engagement and involvement at work. HRM practices were also perceived to support innovation, in line with his colleague. In general, both interviewees from R&D showed similar responses and attitudes to HRM and innovation.

For employees interviewed in the HR department, they perceived their contribution to innovation as promoting and supporting practices that enable them to introduce and promote it. This assertion was shared by two employees in the HR department. All interviewees from different departments shared positive responses in relation to adopting open innovation and the market pull approach. The extent to which the HR department engages in innovation is perceived as essential and a major contributor. The practices employees design and modify were identified by two informants in the HR department. Regarding organisational climate, one of them claimed that it has an indirect impact on innovation, as it is for the long term. On the other hand, his colleague stated that organisational climate influences innovation, as it creates a supportive workplace. Amongst promoters for HRM and innovation, they indicated management support and communication and added that experience in HRM and innovation allows them to introduce new products or services.

In relation to employees in the sales department, similar attitudes were identified regarding the open approach and the market-pull approach. Their contribution to innovation is perceived as reading signals in the market, i.e. identifying customers' needs. Delivering products to customers and entry into new markets are the roles the sales department engages in, in order to promote innovation. According to one of the interviewees, the sharing of ideas and suggestions to develop existing products is a major part of their contribution to innovation. HRM practices are perceived as helping them use knowledge and resources more effectively, while creativity, the ability to solve challenges and complexity were perceived to promote innovation. A number of HRM practices were mentioned also, such as motivation, training, employee security, job design, grievances and health and safety. The value of these practices, as highlighted by the two employees, is to increase their levels of motivation and abilities, and one of them provided an example of training confidence. For challenges to HRM practices, issues regarding the nature of the tasks being performed might make it difficult to implement HRM practices effectively. Likewise, the perception and understanding of practices, in some cases, can affect their implementation. For innovation, one enabler helping introduce innovation, along with HRM and organisational climate, is experience in innovation and understanding customers' needs.

An employee in the product development department was interviewed. The perception of the contribution to innovation was described as a joint collaboration supporting the R&D department in introducing new products and services. Innovation was described by this interviewee as renewal process for the company. A positive attitude toward implementing open innovation and the market pull approach is described as organisational approaches to promoting innovation. This department, according to the interviewee, is dynamically engaged in innovation, through suggesting minor or major changes in new products along with supporting the R&D department. HRM practices are conceptualised as enabling innovation by reducing the complexity associated with innovation and by increasing engagement and involvement levels. Essential HRM practices are training, performance appraisal, job engagement and relations. A promoter of HRM

practices is the willingness to realise the value and importance of HRM practices in supporting innovation, while experience was described as being essential to introducing innovation. This informant indicated that organisational climate can support innovation by creating a flexible workplace and open communication with management. Barriers to innovation are described as experience and time needed to develop new products and services. For HRM, the misunderstanding of some practices and the relevance of these practices to adding value is challenging.

Overall, all the interviewees recognised the value and importance of HRM practices for innovation. They offered perceptions of these practices in relation to increasing levels of motivation, commitment and abilities. Practices related to such perceptions were highlighted by the interviewed employees, while for HRM, innovation and organisational climate, they mentioned what can promote and challenge these factors. There is a high level of shared support for implementing open innovation and market pull approaches.

5.6 DISCUSSION OF THE RESULTS

This section will present and discuss the results of the interviews conducted with managers and employees. In addition, it will analyse and compare the main attitudes revealed in relation to HRM, organisational climate and innovation, as indicated by the managers and employees, over three subsections. First, it starts by analysing attitudes to HRM. In addition, a comparison between managers (representing inter-organisational level) and employees (at the intra-organisational level) is discussed and explained. Next, attitudes to HRM, organisational climate and innovation are also discussed.

5.6.1 Attitudes to HRM

In regards to HR and HRM, a number of questions were addressed in the interviews. These questions tried to measure the importance of HR and HRM practices and establish which ones the organisation adopts. In addition, the interviewed managers cited a number of promoters of and barriers to their HRM practices.

One significant highlight of the results above is that there is a similarity and some consistency between managers and employees in perceiving the value and potential role of HRM practices. It was observed that the perception of employees in regards to the relevance and importance of HR and HRM practices support managers' perceptions of the practices. For instance, managers mentioned that HR and HRM are crucial to gaining a competitive advantage, which is central to any organisation's activities and outcomes – a finding echoed in the work of Barney (1991; 1997). However, on the other hand, from the employees' perspective, the role of HR and HRM practices is described as enhancing employee engagement, motivation and abilities. Although this finding is supported in the literature (see for example Boxall and Purcell, 2011), it seems to be less strategic, and it is conceptualised as being only limited to employees' activities rather than the organisation as whole. This result is expected and can potentially be explained by the fact that employees operate in closed environments related to innovation activities, and such activities are likely to impose somewhat complex processes. Therefore, developing employees' levels of engagement and motivation is expected to reduce levels of complexity and increase their capacity to innovate. When employees innovate, the organisation can then gain competitive advantage. The coordination of their efforts, satisfying their needs and developing an organisational climate that enables them to innovate are all monitored and developed by management, which explains managers' more strategic views of HRM. This may help illustrate differences between managers and employees in identifying HRM practices that can create value and promote innovation, and which are implemented by the organisation in relation to performing tasks and achieving strategic objectives. An example of recognising the importance of competition and the role of HR is as follows:

“HR plays a vital role in our company. It's the cornerstone for most of our operations and it's the main source of ideas, knowledge and [...] competitive advantage” [Interview One].

“HR is the source of knowledge and creativity. I mean, HR is considered in our company as a valuable asset. The processes we

follow, the use of technology, problem-solving and new ideas are all from our HR. It is our main source of competitive advantage” [Interview Two].

This finding suggests that managers try to develop organisational approaches that are related to their resources and their competitiveness. In addition, the value of HR and HRM to competitive advantage is directly linked with the resource-based view and organisational performance (Jiang *et al.*, 2013), which suggests that Orange, according to its managers, adopts commitment-based practices, high levels of involvement and innovative employment practices, as these can promote competitive advantage more effectively. In relation to employees, the findings suggest that they believe that efforts and attitudes within the organisation are geared towards enhancing their abilities and performance. It seems that they value HRM practices through adopting the ability, motivation and opportunity to participate in a framework (AMO) of HRM (Jiang *et al.*, 2012; Edgar and Geare, 2005). This framework aims at enhancing employees’ skills, motivation, participation and abilities, in order to develop organisational performance. There is therefore a distinct link between organisational approaches and HRM practices for the managers and employees at Orange.

Compared to the results obtained from the survey, the regression results as discussed in Chapter 4 present consistent findings and help identify predominant variables influencing both the origins of innovation and radical innovation. At the same time, the interviews illustrated significant levels of awareness and understanding of HRM practices and innovation by managers and employees. This can explain the insignificant impact of demographics on innovation in the hierarchical regression models, as employees are aware of HRM practices, and their perceptions of the practices seem to be homogeneous.

However, managers had a more robust understanding and were clearer on what practices are important for innovation. All of them provided similar statements explaining the relevance and importance of these HRM practices, noting that the value of these practices is to increase levels of involvement,

motivation and engagement. It can be concluded from the results of the managers' interviews that variables such as promotion, job engagement and motivation might be predominant factors in innovation. In comparison to the regression analysis results, findings from the managers and employees are echoed in the findings of phase one and support can be identified for what managers and employees have highlighted. In other words, the practices indicated by managers and employees are close to those that the regression model identified as HPW, motivation and communication, and hygiene factors. Likewise, phase one of the research suggests that innovation is influenced by a bundle of practices, and phase two confirmed this finding. Managers claimed that they adopt a bundle of practices to promote innovation. Employees stressed a similar theme from the practices that they perceive.

Based on the results of the interviews and the regression analysis, it can be concluded that depending on "where you sit in the organisation" (departments), results and significant variables are likely to be shared amongst innovation practitioners; in other words, HRM practices that may promote innovation will not differ significantly. In addition, it was noted from the results of both the interviews and the regression analysis that the experience Orange enjoys showed clear support for significant correlations between HRM practices, organisational climate and innovation-dependent variables.

Another potential explanation for the results is that it seems the context of the study and the Jordanian culture have affected the way employees perceive HRM practices and its importance in Orange for managers and employees. Moreover, the size of the market and the industry in Jordan might also provide an explanation for the results, because although Orange is classified as one of largest in a market where the total number of main telecommunications providers in 2017 was three, it is the first telecommunication company to have accumulated a great deal of experience and knowledge, which may have resulted in its current form or arrangements and practices. Most managers and employees talked about management communication supporting HRM. In addition, the results show that the

informants felt that management support and communication enable and promote HRM practices, whereby they help management identify which methods are more suitable and valuable for employees. Orange managers added that understanding employees and the differences between them enables them to design and adopt procedures more effectively, whereas the same factor was mentioned by employees as a barrier to HRM practices. Aligned with holding annual sessions to revise HRM policies and practices, Orange managers believed that these factors facilitate their HRM and enable them to introduce adequate strategies. An example of this is as follows:

“Also, we have support from management for HRM and direct communication between employees and the management team” [Interview One].

“Also, we can identify employees based on their abilities and skills, so in some cases, we do not ask some employees to do many tasks or complex tasks until we are sure they are capable of doing so” [Interview Two].

In addition, understanding the objective of HRM practices is a challenge for some employees. According to one manager:

“The differences between employees in terms of abilities. Also, the nature of HRM practices needed for different tasks” [Interview One].

“Time can be a barrier to developing specific HRM practices for some employees or teams, especially when we have to deliver a project in a given time” [Interview Three].

Managers indicated that employee differences, time needed to develop and design specific HRM practices as well as employee awareness and understanding of what they need to do can be challenging in relation to HRM.

For the employees, the results show that understanding their needs and differences forms a barrier in this regard. According to an employee in the R&D department:

“In some cases, I feel some practices are really vague and unclear, which is why I then seek my manager, to help me understand better. But it can also still be less clear to me when implementing these practices, saying they are a thing, but implementation is the major thing and totally different in many cases” [Interview One, sales].

“Sometimes, some practices are not very relevant to me, and I feel that I understand and realise their value and objectives, but they seem to be different. I expect some practices to promote some aspects of work-related behaviours, but in reality I have found that the purpose was different, either somewhat in some cases or considerably in others” [Interview One, R&D].

“Understanding some HRM practices can be challenging and I expect from some practices to promote features that are different from the real purpose” [Interview Two, R&D].

This might indicate that management and employees are both aware of HRM promoters and barriers; nonetheless, the differences between managers and employees might depart from the levels of hierarchy, namely the macro vs the micro level. The macro level in an organisation consists of the management team, which tends to offer holistic explanations on activities within the organisation, unlike at the micro level, where employees may have individual and specific concerns rather than holistic. Some managers and employees mentioned the gap between expectations and the reality of HRM practices. This highlighted finding is supported in the literature by Alfes *et al.*, (2013), who indicated that the gap between employees' expectations of HRM practices and the real purpose of these methods can minimise efficiency. This can partly form a potential explanation for the differences in and inconsistency of the survey results.

From the above findings, research suggests that employee perceptions of HRM practices, and the importance thereof, is crucial to the process of implementing them. Their outcomes may then be less effective and desired, especially by management. According to Combs (2006), HRM practices are expected to increase levels of motivation and skills and enhance attitudes

and behaviours at work. A clash of perceiving and understanding these practices may hinder and negate their effectiveness and assumed outcomes. Managers' perceptions and the design of HRM practices, as well as employees' understanding, are widely recognised in the literature and are seen as having a non-significant impact on employees and their performance (Kuvaas, 2007; Khilji and Wang, 2006; Truss *et al.*, 1997). Based on the results suggested by the survey, aligned with the interview results, a potential explanation for this dissimilarity, and to some extent statistical findings from the regression models, could be explained as the differences between employees understanding the goal and the effect of HRM practices in addition to the gap between their expectations and what management actually intend to achieve from those practices. For instance, motivation, recruitment and motivation were shared by two managers at Orange as being the most important procedures for the organisation. One manager, however, emphasised on the role of recruitment in this regard. Additionally, practices of motivation, recruitment and motivation were only common and supported by most of the managers, especially those dealing with recruitment. Furthermore, they mentioned other practices and failed to show similarity for these practices with each other's statements. For instance, according to some managers, the following practices are adopted:

"Recruitment, motivation, performance appraisal, absence management, employee development, job engagement, health and safety at work, retention management and training" [Interview One].

"Motivation, absence management, knowledge sharing and other practices" [Interview Two].

"Employee development, training, job engagement and absence management, to recruitment and motivation" [Interview Three].

For the employees, job design, sharing information, training, performance appraisals and recruitment were shared across the interviews. Moreover, the nature of each HRM practice task and objective can be challenging to employees and organisations, which may explain the respondents' variations in their answers. This was stated by the majority of the managers, i.e. that

employees' understanding and expectations of HRM can be challenging. Another important finding of the interviews is that organisations tend to adopt a bundle of practices instead of a specific limited number. This finding is supported and explained by many studies considering HRM and the performance of both employees and the organisation. According to Snape and Redman (2010) and Alfes *et al.*, (2013), this strategy boosts the performance of employees and as a result the performance of the organisation. Jiang *et al.*, (2012) added that focusing on abilities, motivation and opportunities can positively enhance performance outcomes.

This finding is emphasised by a number of scholars, such as Avey *et al.*, (2012) and Shipton *et al.*, (2006), who highlighted that HRM practices can be good for creativity and facilitate the process of innovation. The impact of HRM on innovation was manifested and illustrated in the interview results. All of the managers from Orange indicated that it is a valuable asset in this regard, as it is a source of ideas, knowledge and creativity and reduces complexity. This is as a result of HRM developing employees' skills, performance, abilities and knowledge. The managers identified a number of HRM practices that stimulate innovation:

"I will recall here some of our HRM practices that we adopt, such as employee communication, job engagement, promotion, health and safety, recognition, email and internet, absence management, equal opportunities, performance appraisals, employee security, redundancy, motivation, recruitment, recognition and employee relations" [Interview One].

These results show some similarity with the regression analysis results in identifying which HRM practices promote innovation, as discussed in Chapter 4. However, although the regression analysis shows which HRM practices are predominant and the most important for innovation (HPWs, motivation and communication hygienic factors), the results from the interviews revealed that potentially predominant HRM practices that promote innovation are related to job engagement, commitment, involvement and motivation from management and employee perspectives. IN this respect,

HRM practices could include job engagement, recognition, health and safety, promotion, recruitment, recognition, motivation, employee development and employee security, which are major elements (HPWs, motivation and communication, hygienic HRM and expectations and information sharing). This supports the finding of Boon et al. (2007), who found that rewards, communication and a customer-focused approach are positively associated with employees' involvement at work. Managers at Orange, however, emphasised the importance of the practices adopted by their organisation in order to develop levels of commitment, performance and motivation. Additionally, one manager stressed the value of engagement – a finding widely supported in several studies on HRM. For example, Boon and Kalshoven (2014) noted that they increase levels of commitment and motivation and enhance organisational commitment and involvement, which are seen as antecedents to and requirements for competition and development.

5.6.2 Attitudes to Organisational Climate

As the results show, the interviews contained various questions investigating organisational climate and their importance and relevance to HRM practices. Orange managers believed that organisational climate result from organisational performance and culture, with three managers claiming:

“[...] culture summarises employees' beliefs in innovation, creativity and assumptions of what creates value” [Interview One]

“Culture massively supports innovation, in that employees perceive innovation and its importance to competition” [Interview Two]

“Organisational characteristics in terms, for example, of culture can produce a shared belief in the importance of innovation” [Interview Three].

This finding suggests that organisational culture creates an environment that can host and promote innovation and performance, which in turn may lead to a more creative workplace, networks and teamwork, all of which are central to performing activities and tasks. This is supported in the work of Huselid

and Delaney (1996), who perceived organisational culture as a host for creativity and promoting productive workplaces. Findings also show that organisational climate affect the acquisition of knowledge as well as knowledge sharing; however, there was no strong support for this notion, as only one manager mentioned this point. Additionally, the findings show that the organisational structure in Orange is vital to supporting employees' activities. This indicates that higher levels of autonomy and freedom at work raise levels of commitment and that organisational structure can enhance levels of commitment and reduce complexity.

For employees, the interviews showed a shared view on organisational climate to support their organisation to read signals in the market and offer an environment for employees to support task performance. Organisational climate also play a role in supporting activities like innovation, but most importantly, employees perceive them as being designed and modified based on long-term goals.

They also claimed that organisational structure is what matters and enables them to perform tasks, stressing its value as well as that of autonomy at work, unlike managers, who highlighted performance and culture as being vital in this regard.

The findings for Orange suggest that performing organisational activities and goals requires a supportive organisation and depends largely on the ideas and creativity of employees (Miron *et al.*, 2004). A culture that supports innovation is characterised as allowing its staff to be more creative, knowledgeable and motivated (Miron *et al.*, 2004). In their study on the impact of personnel behaviours and organisational culture on innovation, Miron *et al.*, (2004) found strong support for the role organisational culture plays in promoting innovation and that creativity supported by organisational culture also stimulates innovation. Unlike culture, for Orange, performance is largely affected by managers and CEOs (Berson *et al.*, 2008), while the former is more collective and shared across different entities, which in turn can lead to a more supportive workplace.

Managers covered different aspects across the spectrum of organisational climate and showed the importance and relevance of different characteristics. Moreover, this finding shows that managers in Orange are more aware than their employees of the importance of its characteristics and hence can lead to greater prospects for its resources and abilities, because managers have access to various resources within the organisation and they are able to diagnose what it and its individuals are capable of and expected to produce. This then allows them to make a holistic evaluation of organisational climate more than employees. In addition, the results show that managers prioritise HRM practices over organisational climate in promoting and enabling innovation. In addition, they do not support specific organisational climate that are essential to the organisation or innovation. This result supports employees' assumptions and views on organisational climate as they stated its general for the organisation and impose indirect impact on activities like innovation.

Two managers claimed that skills and abilities are the results of HRM practices and that the organisation identifies its characteristics based on them as well as policy. This finding is supported by classical and extensive work on HRM studies, in which several scholars have asserted the importance of HRM in promoting skills and abilities (Boxall and Purcell, 2003; Wright *et al.*, 2005). Performance and abilities seem to be linked to HRM practices more than organisational climate.

The results identified that there are a number of enablers and challenges for organisational climate, namely management support and HR, according to two managers. This indicates an understanding of employees' needs and circumstances, which can enhance their commitment and involvement. One informant mentioned the role of employee feedback in developing characteristics, while another indicated that experience in promoting and developing organisational climate supports their efforts in this regard.

For employees, promoters of organisational climate are job design and the structural flexibility. One employee stated that diversity in the organisation acts as an enabler in this respect. An interesting finding is that employees'

willingness to accept changes can support organisational climate, at least according to two interviewed employees in the sales and R&D departments.

These results indicate that management are more confident and holistic in understanding their abilities and resources, which might indicate that Orange has a management team with the experience to determine the resources and activities required to support organisational functions.

On the other hand, barriers and challenges to organisational climate from managers' perspectives were customer needs, according to all managers, thus making it challenging to develop organisational climate. The degree of freedom at work can act as a barrier to organisational climate, as stated by one manager, in addition to culture, which is supportive of the work environment and innovation activities. This shows a realisation by management of what employees demand and need, as employees confirmed that organisational structure and job design are the main characteristics for them. A distinct answer was obtained from the employees, who claimed that continuous change in the external environment can be a challenge to developing organisational climate. Additionally, they indicated that the lack of management support and collaboration can make life difficult.

HRM is considered as effective and crucial for performance and organisational climate, as practices can promote diversity, skills and motivation and enhance abilities (Guillaume, 2015). In addition, management support is vital for performing tasks and promoting innovation, while dissatisfied employees can negatively influence organisational capacity to compete and perform tasks (Mattarelli and Tagliaventi, 2015). Overall, the results regarding attitudes to organisational climate varied among the managers and employees, which may explain and indicate why managers have a more realistic and holistic evaluation and estimation of existing resources and what can be produced by employees when implementing these resources. Moreover, it may explain the difference between managers and employees in relation to the latter's less enthusiastic opinion on organisational climate. In addition, the managers stated that employees' understanding of the nature of objectives, tasks and organisational goals is a

barrier to organisational climate. Overall, they stated that their organisation's current position is a result of its HRM and organisational climate. Additionally, they prioritised HRM practices over organisational climate concerning how they affect innovation. Adopting open innovation and the market pull approach also helped when introducing innovation, and all of the interviewees showed support for these aspects in reducing complexity and introducing radical innovation. This finding explains the regression analysis finding that respondents are more positive about radical innovation, and they also show that HRM practices may potentially affect employees' awareness of and commitment to radical and open innovation rather than the closed option.

5.6.3 Attitudes to innovation

Employees were asked a number of questions seeking to understand their contribution and how they perceive innovation. Across the interviewed employees, there was a common understanding of the value of innovation as increasing organisational competitiveness. More specifically, they cited that it is considered a core renewal process. In addition, acquiring customers and increasing market share are in the realm of innovation, according to the employees. They conceptualise this notion by meeting customer needs through the introduction of innovative products and services. Innovation advocates in their studies (see, for example, Damanpour *et al.*, 2009; George *et al.*, 2012) indicate the importance of innovation for renewing the organisation and offering products and services that meet customers' expectations. Moreover, studies on innovation conclude that innovation positive promising is not merely limited to renewing the organisation, but also to strengthening its market position. This has twofold impact: offering new products that might change market rules and create space for creative replacement, and developing the way the organisation does business.

"In my organisation, R&D is at the heart of any change or renewal and the things we offer to customers" [Interview One, R&D].

An important finding indicated from the results in respect to the organisational approach to innovation, is that both managers and employees tend to adopt

open innovation coupled with the market pull approach. The following of such an approach can be explained as being necessary to gain new customers, identify customer needs, deal with severe competition and reduce levels of complexity associated with innovation. Adopting open innovation facilitates radical innovation and helps gain access to additional resources and knowledge (Chesbrough 2003; 2006; Damanpour *et al.*, 2009). Besides that, the market pull approach is considered a customer-friendly approach to innovation that enables the introduction of successful new products and satisfies customer needs (Brem and Voigt, 2009). In regards to the survey results, the descriptive analysis results show more positive responses in favour of radical innovation than incremental innovation. This can be explained by the fact that some managers claimed that the benefit of adopting open innovation stimulates radical innovation, while employees highlighted its adoption, as it brings unique resources that facilitate radical innovation.

This indicates that managers and employees not only implement settings and arrangements to innovate, but they also extend this approach to ensure they meet the demands of and satisfy their customers. Therefore, a higher tendency toward open innovation and radical innovation, indicated by the interview findings, may explain statistical findings in this regard, as presented in Chapter 4. Reflecting on the results obtained from the survey questionnaire, namely that Orange relies on external sources for innovation, this notion is supported by the interview results, as the managers and employees claimed they adopt an open innovation approach. Moreover, the interviews revealed that the market pull approach is aligned by both companies with open innovation. This result may justify and potentially explain why correlation and regression findings show significant variances for HRM practices, as the open innovation and market pull approaches entail being close to customer needs and markets, as well as the use of networks and external resources. These activities are inherited and practiced by the HRM, sales, R&D and product development departments, as they form a major part of the process of developing new products or introducing innovation. This can also show that there is a level of collaboration between

different departments within the organisation in facilitating innovation. Such collaboration is required, as innovation being a multifaceted activity demands support from various units, and in many cases, these units could be beyond organisational boundaries (Chesbrough, 2003; 2006).

In identifying HRM practices that are adopted in order to promote innovation, the results for Orange revealed that, according to the managers, these practices are implemented and adopted to increase levels of involvement, engagement and motivation at work, and for employees, they are relevant to their commitment and motivation. This finding shows a high degree of similarity between managers and employees in perceptions of the value of the HRM practices adopted. Interestingly, these procedures have a twofold effect: the literature on HRM denotes that employee engagement and motivation at work are directly associated with and affected by HRM practices that can develop the tendency and awareness to be more effective, engaged and loyal. In addition, the black box of HRM (Boxall and Purcell, 2003; 2011) suggests that these methods can influence performance and outcomes such as innovation (Shipton *et al.*, 2006) through their mediating role, in that they can promote commitment, knowledge or other individuals' work-related behaviours in order to promote performance and innovation. This can partially explain the results from phase one, which looked at the direct impact of HRM practices on employee awareness and commitment to innovation and neglected the mediating role of other factors such as knowledge or commitment. An important highlight from the interviews is that a list of HRM practices implemented for innovation was identified:

"I will recall here some of our HRM practices that we adopt, such as employee communication, job engagement, promotion, health and safety, recognition, email and internet, absence management, equal opportunities, performance appraisal, employee security, redundancy, motivation, recruitment, recognition and employee relations" [Interview One].

"I will mention the ones that we focus on and we discuss a lot in our meetings regarding HRM: motivation, recruitment, job engagement, employee development, recognition, employee relations, employee

voice, employee development, knowledge sharing, diversity, equal opportunities and absence management. We have been adopting these practices for a considerable period of time, and we see good and positive outcomes” [Interview Two].

“Performance appraisals, recruitment, job engagement, absence management, grievances, employee relations, recognition, motivation and redundancy are the main practices we focus on in promoting innovation. I’m sure other practices are important and they add value. But, in our experience, we find that these are the most important for innovation” [Interview Three].

On the other hand, employees were in agreement with some of the practices mentioned by managers. Nonetheless, the research found that results for some practices differed between managers and employees. The distinctive difference lay in the focus on the scope and nature of these practices. Employees tend to highlight HRM practices that are in line with their development, skills improvement, needs and abilities to perform tasks.

Managers, as indicated above, despite their similarity with employees, instead lean more toward generic claims around HRM practices that seem to be more central to affect the organisation.

An example of the practices indicated by managers as follow;

“Performance appraisals, recruitment, job engagement, absence management, grievances, employee relations, recognition, motivation and redundancy” [R&D manager].

For employees, a sample of the practices highlighted were as:

“Training, job engagement, employee development, employee relations, consideration and respect, sharing of information and knowledge, motivation, rewards and communication” [Interview One, R&D].

Employees were similar in their identification of the practices that influence innovation. However, some practices differ across employees in perceiving

what is valuable for innovation. For instance practices like grievances, absence management and discipline were not shared across employees. There was no shared support for these practices through the interviews. This might be due to the nature of tasks entitled by each department despite that results from regression failed to show support for departments as being significant. On individual cases, maybe limited, the nature of tasks within the department might lead to such finding, yet, it is not strongly supported. For instance, grievance was perceived significant by one of the employees in sales department and this might be as the nature of tasks in this department perceived by this employee as requiring fair grievances practices to feel more motivated and protected given the nature of work being more open to customers and external channels which demands more support for fair treatment in case a complaint might arises.

The results also show that managers tend to rely on their experience when designing practices that support innovation. Orange, from the interviews, was able to identify what the practices are for, as well as the value of these practices. Organisations adopting innovation strategies, according to Curran and Walsworth (2014), are highly encouraged to adopt HRM strategies that promote involvement, commitment and engagement, as such an approach intensifies employees' participation and involvement in challenging tasks such as innovation (Curran and Walsworth, 2014).

Furthermore, considering the promoters and enablers of innovation available to Orange, it is evident that experience plays a major role in shaping and identifying HRM practices that promote innovation, as all of the managers stressed its importance in this regard. Additionally, external networks and resources and government support, according to one manager, support Orange's attitudes and activities to enabling innovation. For the employees, the results revealed that management support and communication are enablers for innovation. This is in line with managers' shared awareness of the role of experience in this regard. As management depend on experience to facilitate innovation, this experience can then be utilised and transferred to employees through communication and support. Such factors, according to the literature, are commonly described as antecedents and prerequisites for

innovation. Experience in introducing new products to customers and in innovation, as well as the use of external networks to facilitate the process of open innovation, is considered vital and equal in importance to internal factors and organisational arrangements (Chesbrough, 2006).

In relation to challenges and barriers to innovation, the results show that it can be challenging for Orange to identify financial resources required for innovation, as indicated by its managers. In addition, severe competition and differences between employees in terms of abilities and skills can reduce organisational abilities when promoting innovation. These challenges were identified by most of the managers at Orange. Added to that, according to one informant, the time required to develop innovation can be a barrier. From a micro perspective of employees, barriers include rapid changes in the market and the various resources required to promote innovation. Time was highlighted by some employees in this respect. These results can be aligned with changes in the market and intense competition in the telecommunications industry. A wide body of literature on innovation management, as discussed in Chapter 2, has linked its occurrence with the lack of ability to introduce not only innovative products, but also, more fundamentally, successful innovations. Such ability is associated with the organisational capacity to innovate and relies on resources, understanding market needs and, in many cases, being the first mover in the marketplace.

5.7 SUMMARY

This chapter has detailed the results of interviews with senior managers at Orange and a number of employees within departments engaged in innovation activities. In total, three semi-structured interviews were conducted with senior managers and seven semi-structured interviews with employees. The interview questions covered the main objectives and research questions and attempted to understand better the results from the regression analysis.

The results obtained from both managers and employees helped explain the quantitative data results. Factors in promoting innovation in Orange were found to be significant and consistent, an example of which is that all of the

managers viewed the importance of HR and HRM as a source of competitive advantage. Additionally, they emphasised the role of experience in introducing innovation, as well as that of HRM in supporting innovation. Employees, on the other hand, stressed the importance of HRM for developing levels of engagement and commitment.

The results for the employees show that they seem to require more support from management to stimulate innovation. This can be seen in the interviews, where the former stated that management support and communication are vital to innovation, in addition to experience.

However, the results also support the quantitative data analysis conducted in phase one. First, the results matched with the regression analysis results in terms of the impact of HRM practices in promoting innovation. Second, the interview results were able to demonstrate the respondents' positive responses regarding external sources of innovation. Third, the results were consistent with the positive responses to radical innovation, as Orange managers and employees claimed that open innovation allows them to adopt radical innovation.

Throughout the interviews, the managers offered explanations that were more holistic in nature, such as the value of HRM for competitive advantage, taking market approaches to identify customer needs, the role of experience and financial resources. Factors highlighted by employees sat more on the micro level of job performance, which was the aim of their participation in this phase of the research; in other words, they specified issues that were limited to their work environment and needs. An example of this is that they require collaboration with other departments to sustain innovation. Similarly, they claimed that they require in some cases certain HRM practices to support their task performance, and job design and structure to enjoy levels of freedom at work, thereby allowing them to perform tasks in a more productive manner.

Overall, the results show positive responses and consistency to support the regression analysis results. Furthermore, Orange was able to explain the results in the regression analysis regarding the HRM-innovation link and

organisational climate. Managers and employees mentioned that they priorities HRM over organisational characteristics, which may explain and justify the significance of HRM practices for Orange.

The next chapter will offer an overall conclusion on the thesis, mainly on the findings of each phase, along with recommendations and limitations of the study.

CHAPTER 6

CONCLUSION

6.1 INTRODUCTION

The previous chapters have presented research considering the relationship between HRM practices and innovation awareness and commitment and the role of organisational characteristics in promoting innovation awareness and commitment. This chapter provides an overall summary and conclusion for the whole thesis. The chapter starts by describing the research undertaken, mainly highlighting the research phases conducted, discussed in Section 6.2. The processes and phases of the research are presented (see Section 6.2.1 and 6.2.2). Research outcomes and findings are then considered, particularly in relation to the research questions, where the integrated results, findings and discussion of research phases are described in relation to the research questions (see Section 6.3). Subsequent to that, the implications of the research are introduced in Section 6.4, along with a number of suggestions for business practitioners and others. Following that, research contributions are presented and described (see Section 6.5). After that, Section 6.6 highlights recommendations for future research. The research limitations are then discussed (see Section 6.7). The chapter's final section provides concluding remarks (see Section 6.8).

6.2 RESEARCH PHASES

The research was conducted over two phases: a quantitative questionnaire survey (phase one), and semi-structured interviews (phase two). Each phase is summarised below.

6.2.1 Phase One: Quantitative Questionnaire Survey

The quantitative questionnaire survey was conducted using paper-based questionnaires distributed by the researcher. Initially, Orange Company in the Jordanian telecommunications industry participated in the questionnaire survey. Participants were employees in HRM, Sales, R&D and Product

development departments. A total number of 129 usable questioners were obtained from Orange.

The perceptual relationship between HRM practices and innovation from the employees' standpoint was measured through the questionnaire survey, which consisted of three key elements. The first concerned HRM practices. The second element was about organisational characteristics, and the third element was about assessing innovation. The questionnaire survey was constructed using existing scales from previous studies related to HRM and innovation. In addition, the questionnaire considered a larger number of HRM practices than have been studied before; therefore, new scales were developed and inserted in the questionnaire. These scales represented HRM practices identified from previous HRM models such as the Guest and Harvard models, as well as a list of HRM practices from Armstrong's (2011) *Handbook for Human Resource Management*.

6.2.2 Phase Two: Qualitative Semi-Structured Interviews

The semi-structured interviews were conducted over the phone. A total number of ten interviews were carried out as follows; three managers and seven employees. The semi-structured interviews formed a follow-on study intended to clarify and gain more insights into the quantitative questionnaire results. The managers interviewed were key personnel from departments that participated in the quantitative questionnaire survey, namely HRM, Sales and R&D departments. Employees participated in the interviews were also working individuals of the departments participated in phase one of the research; two from HRM department, two from Sales department, two from R&D department and one from product development department.

For managers, all the informants were asked the same questions. Across interviews with employees they were asked similar questions with those pointed to their managers with some changes in the nature of questions to stimulate an intra-organisational level of participation (See Appendices 3 and 5). An example of the changes in the content of the questions between managers and employees is that managers were asked at the beginning about the value of HR and importance of HRM. Employees were not asked

the same questions, rather the interview started with asking their perception of their contribution to innovation. In addition, employees were asked questions that are seeking to understand their personal perception of HRM practices and innovation; such as asking them how they describe their contribution to innovation.

The interviews with managers and employees covered three main components of the research: HRM, organisational characteristics and innovation. For each element, a leading question was asked, followed by a number of sub-questions. The content of the interview questions derived from the results of the questionnaire survey, along with the main research questions. Generally, each interview lasted around 45 minutes. The findings and conclusions of the interviews are presented in Chapter 6.

6.3 SUMMARY OF THE RESEARCH FINDINGS

The research outputs are considered in this section. Analyses and findings of the research are presented and discussed in Chapters 4 and 5; however, below they are summarised against the research questions. The integrated findings from both the quantitative questionnaire survey and the interviews are presented to provide answers to the research questions addressed earlier in the research.

As mentioned earlier, the questionnaire survey was designed and distributed to study the perceptual relationship between HRM practices, organisational climate and innovation by identifying which practices and characteristics are considered to be promoters of innovation from the perspective of employees. Interviews were conducted to clarify and get better insights into the results of the quantitative questionnaire survey. The interview questions covered three main elements: HRM, organisational climate and innovation. In addition, the interview questions attempted to study the link between HRM, organisational climate and innovation as addressed by the main research questions.

RQ1– To what extent is there a relationship between employees' perceptions of HRM practices and innovation awareness and commitment?

RQ1a– What are employees’ perceptions of the relationship between HRM practices and radical open innovation?

The hypothesised relationship between HRM practices and innovation awareness and commitment is considered in this sub-question. Overall, the results have found that employees perceive HRM practices to have impact on radical open innovation. The statistical findings and descriptive results show positive mean score responses for radical innovation and external resources. It was noted in Chapter 4 that higher mean scores for radical vs incremental innovation indicate positive responses for radical innovation and that the opposite is the case for incremental innovation. In the same way, the more positive mean scores for origins of innovation indicate open innovation, whereas the less positive mean scores indicate closed innovation. This was also confirmed by the interviews. The results identified a number of predominant variables representing HRM practices and organisational characteristics to promote innovation. In relation to interview results identified a number of practices that show a high degree of similarity with the regression results.

Statistical findings suggest that leading factors in promoting radical innovation and external origins of innovation are HPWs and motivation and communication. These two variables were common in impacting innovation for both radical innovation and open innovation. Similarly, for organisational climate, the research found the both radical innovation and open innovation are influenced by organisational climate.

Moreover, the research found that hygienic factors impact open innovation, and failed to impose any impact on radical innovation. An interesting finding from the research is that expectations and sharing information exhibit factor showed no significant impact neither on radical innovation nor open innovation, and as a result on innovation awareness and commitment.

These obtained results indicate consistent findings of the research. The impact of HPWs on radical innovation and open innovation is expected. Schools of thoughts on HRM, organisational performance in specific and existing research on HRM signify the positive impact of HPWs on

organisational outcomes and innovation. In this regard, results from phase one of research were supported from phase two findings through the interviews. Findings from the quantitative analysis showed that HPWs are significant for both origins of innovation ($B=0.502$, $p<0.001$) and radical vs incremental innovation ($B=0.423$, $p<0.001$). Interviews conducted with managers and employees confirmed the observed patterns from phase one. Managers and employees stressed the importance and value of HPWs in promoting employees' skills and abilities. In addition, interviewees claimed that skills and abilities are vital in promoting the capacity for innovation and reducing the complexity that might arise from innovation.

The main argument that HPWs advocates holds in promoting organisational performance and innovation is that skills, abilities, and employees' capacity to innovate can be directly developed through a set of HRM practices that might then influence their behaviours and attitudes towards innovation (Teece, 2007; Barney, 1991). The bucket of practices adopted by HPWs belong to best practices approach in which the organisation identify practices that are like training, recruitment and performance appraisal to develop employees performance, abilities and skills. Innovation is regarded as a survival condition in these days (Damanpour *et al.*, 2009) and the race to innovate know unspecific track to follow but the end product must be well defined, however, organisations must have a set of antecedents in order to innovate, collaborate with others through open innovation or introduce changes regardless of their degree. In this regard, radical innovation and open innovation involves high levels of complexity. In addition, the competition in the marketplace in forms of tense and rapid requires the organisation to harness its knowledge, abilities, skills and employees willingness to innovate, which demands a set of practices adopted by the organisation to promote these characteristics and behaviours (Davenport, 1993; Fu *et al.*, 2015).

The levels of commitment and awareness towards innovation can be developed through a HPWs which is also described by a number of scholars (Combs *et al.*, 2006; Evans and Davis, 2005 Jiang *et al.*, 2012) as strategic human resource manage (SHRM). SHRM aims at enhancing employees'

commitment, skills, productivity and work behaviours so they can become a source of competitive advantage for the organisation (Fu *et al.*, 2015). In line with this view, as innovation is a source of competitive advantage in forms of radical innovation to outperform competitors, and open innovation to use external networks to facilitate innovation, it is expected then HPWs to impose impact on radical and open innovation. This finding was confirmed by quantitative and qualitative analysis; significant levels of correlation for radical and open innovation were supported by the interviews. Managers and employees indicated that radical innovation is better able to increase competitiveness and the tendency to be the first mover in the market. For open innovation, interviewees claimed that it is beneficial in reducing complexity and the time needed for innovation and in acquiring new resources that can facilitate innovation.

The case in the Jordanian market under changeable customers' demands and insertion of new technology requires that Orange to develop employees' levels of commitment and work behaviour towards innovation which can be facilitated through HPWs (Fu, 2013; Fu *et al.*, 2015).

This finding supports existing studies on HRM and innovation. A number of studies were conducted (Shipton *et al.*, 2005; Zhao *et al.*, 2012; Jimenez and Valle, 2008), however, still limited and scant to study the relationship between employees perceptions of HRM and innovation as detailed in Chapter 2. Now, these studies seem to borrow HRM practices from ability, motivation and opportunity framework (AMO) which include practices of training, recruitment, appraisal, job design and similar practices donated by HPWs.

The research also found that employees perceive motivation and communication have positive impact on radical innovation and open innovation. This points towards that the significant impact of motivation and communication on innovation awareness and commitment is consisted. The results suggest that employees are expected to have more innovative work behaviour and awareness towards innovation when motivation and communication are implemented. Employees when their efforts and

contribution is rewarded and recognised their capacity to innovate is likely to develop, due to motivational factors that promote idea generation, commitment, involvement and adapting to change if needed. Statistical findings, supported by qualitative findings from the interviews, confirmed these patterns. The values for correlation analysis suggested significant association between motivation and communication and origins of innovation ($r=.540^{**}$) and radical vs incremental innovation ($r=.679^{**}$). Regression analysis supported this finding by displaying significant values for motivation and communication with origins of innovation ($B= .434$, $p= .000$ and $B= .453$, $p= .002$) for radical vs incremental innovation. Further support for these findings was obtained from interviews conducted with managers and employees. Findings from managers and employees show that motivation and communication play a crucial role in promoting innovation through the flow of knowledge and ideas, effective use of resources and increasing levels of engagement and commitment at work.

For The dynamics in which radical innovation occur, demands a motivational factors as the levels of uncertainty are higher (Damanpour *et al.*, 2009) in order to preserve some levels involvement, creativity and willingness to introduce innovations. Communication, likewise, facilitates the flow of emerging, knowledge sharing and collaboration between different units within the organisation. Moreover, communication is central for activities associated with open innovation. Communication can convey effective and useful information from external counterparts and competitors shall cooperation takes place. It is also that within Orange, the results suggest that a communication and motivation factors can signal innovative attitudes at workplace especially within the competition in the marketplace. The propensity for each of motivation and communication can be linked with each other; that is a form of 'communicate to motivate' and 'motivate to communicate' as both factors can take several forms and not only limited to narrow single scopes especially within an organisational surroundings that is surrounded by various dynamics and what is constant is the change.

Seems that there is no simplicity in innovation, apart from the wording of innovation equation as 'ideas generation + implantation of ideas (followed by

calibrations and changes) = New products'. As ideas are the source and origins of innovation from human resources as discussed in Chapter 2, then to ensure an effective flourishing of ideas they first need to be 'communicated' and transmitted to supervisor, head of department or line managers. In addition, other members of the department or team they are processing innovation through communication regardless of its form. Therefore, it is expected to have a potential impact of communication on innovation; radical and open. As innovation requires antecedents, idea generations also demand the same in different forms, and an intrinsic driver to that is motivation. As the results found the motivation and communication have significant impact on radical and open innovation, this indicate that Orange is considers multiple factors to promote innovation. HPWs, to stimulate skills and abilities and other innovative work behaviours, aligned with motivation and communication to generate ideas, creativity, motivating employees and building networks to sustain innovation.

The research found that employees' perception of hygienic factors is significant for open innovation. This suggests that Orange considers safety and motivational aspects of workplace to its employees. The significant impact of hygienic factors on open innovation is expected and can be potentially explained by the nature of open innovation that employees in Orange do endure. Based on the findings from the two research phases, support can be found in both quantitative and qualitative findings. For the statistical findings, scores for correlation between hygienic factors and open innovation were significant ($r=.549^{**}$), suggesting a positive association, and the regression analysis confirmed it to be a positive impact ($B= .326$, $p= .002$). Managers and employees claimed that factors related to hygienic HRM are supportive of innovation. They added that consideration of different aspects of employees' circumstances at work, including their safety, develops their levels of motivation and engagement, which can then support innovation.

It might be as open innovation involves exposure to external sources and networks, Orange and in order to motivate its employees attempt to create a healthy, safe and motivating environment for employees who are engaged in

activities that urge some forms of risk taking in terms of idea implementation, visiting development labs, and sharing information with others. This can also preserve, if not develop existing levels of commitment and involvement at work.

Employees' perceptions of hygiene factors showed no impact on radical innovation, despite the fact that levels of complexity with radical innovation can potentially be high; however, this might indicate that health and safety procedures within Orange differ from those procedures followed when externally sourced activities are in place.

Moreover, this might be a result of the age distribution within Orange, where the majority of participants (71%) were in the age group under 20 to 30 and they might value health and safety more when they collaborate with external agents or competitors, which can also reveal that employee relations and communication with management exist and are positive in internal settings.

Additionally, open innovation as observed from the quantitative analysis is a part of innovation awareness and commitment along with radical innovation, this can be explained as one of the factors to challenge innovation according to managers and employees is time. Open innovation can reduce the time required to introduce innovation by collaborating with competitors and acquiring resources that the organisation lack.

The research suggest, based on the results that there is no significant impact for expectations and information sharing on innovation. This variable showed consistent impact; that is no significant impact neither on radical innovation nor open innovation. It seems that Orange does not follow specific guidelines for expectations and information sharing. This can be seen as motivation and communication have positive impact on innovation and that expectation and sharing information show no impact. Rather, employees are influenced by factors such as grievances, employee relations, communication, and consideration and respect to promote innovation.

This result can be also explained as highlighted in the interviews. Results from interviews suggest that the differences in attitudes towards HRM

practices and innovation led to dissimilar results across both managers and employees. The differences between employees' understanding and abilities and what is expected from them and the gap between the actual and real purpose of HRM practices and employees' expectations may have led to this. This finding could not be measured properly in the quantitative phase as it was aimed only at employees and also was not designed to measure such attitudes. Therefore, the qualitative analysis offered better insights into the gap between employees' and managers' explanations.

The interviews conducted with both managers and employees show that all managers indicated that they adopt a market pull approach to innovation and that they also follow an open innovation approach. In addition, results show that Orange implement a bundle of HRM practices as mentioned by managers and employees. This confirms the finding from the questionnaire survey that a number of variables were identified to have an impact on innovation.

The results show that the HRM variables that impact on innovation, according to all the interviewed managers, are designed and implemented to increase employees' motivation, engagement and involvement at work. The findings from the questionnaire survey tend to support this result, as factors such as motivation and communication, HPWs and hygienic factors support job engagement, motivation and commitment. Correlation analysis findings were significant for all the dependent variables of HRM and organizational climate (see Chapter 4, Table 4.8). Hygienic factor found to have positive impact on radical innovation as discussed earlier, this could be a result of the organisational orientation towards market pull, which stimulates higher levels of new ideas that might stimulate radical changes in the products.

Employees through interviews asserted on the value and importance of innovation for renewal process and market growth. This supports the awareness towards innovation observed from the statistical findings in the research. In addition, in supporting motivation and communication obtained from phase one of research, interviews with employees found that HRM

practices promote motivation and communication which can enable employees to be engaged with innovation.

Overall, the results regarding radical innovation and open innovation are consistent which supports a robust finding and conclusion of the research.

RQ1b– Do employees in different departments (HRM/Sales) and (R&D/Product development) vary in their perceptions of the relationship between HRM practices and innovation awareness and commitment?

As presented in Chapter 2, a number of hypotheses were developed to answer the research questions.

Regarding the characteristics of the departments, statistical findings suggest that there is no significant impact on departments in terms of identifying different HRM practices. Moreover, the research found that, depending on the department, perceptions and attitudes towards HRM practices and organisational characteristics do not differ. When running hierarchical regression, inserting departments failed to show change in the significance of the variables. This indicates that employees in Orange share a common awareness and commitment towards innovation regardless their department. Rates of innovation, however, might differ depending on the department which is not the aim of this research to explore. What matters, rather, in the crux of the aim of this research is to study the link between HRM practices and innovation and specifically for this research sub-question is whether departments differ in terms of identifying different practices. This finding was also supported by the statistical analysis; when the hierarchical multiple regression was run, no changes were found in the values of the impact of department on either origins of innovation or radical vs incremental innovation. The values were as follows: $B=0.159$, $p=.143$ for origins of innovation and $B=0.100$, $p=.290$ for radical vs incremental innovation. Moreover, the impact of department on the bundle of HRM practices dependent variables and organizational climate remained with no significant impact when department variables inserted in the regression models.

In that perspective, the research found that employees are homogenous in their perception and awareness towards innovation as indicated by the statistical findings. Employees in service-led departments and innovation-focused departments seem to have a common awareness and commitment towards innovation and what might create value for innovation.

This was also supported by the results obtained from the interviews. During the interviews, managers and employees indicated that their organisation adopts a market pull approach and open innovation, which requires greater collaboration and effort by different units and departments to sustain innovation which might have established a common perception of HRM-innovation awareness and commitment among employees. In order to facilitate open innovation through networks of suppliers, competitors and knowledge sources this requires collaboration of R&D and Product development department as well as different departments. Similarly, market pull signifies the role of the Sales department in approaching customers and understanding the signals in the marketplace regarding customer needs and their feedback. This might have played a central role in establishing a homogenous and common awareness of innovation across different departments, and resulted in no significant impact of department in terms of identifying different HRM practices. Moreover, managers and employees have emphasised the role of HRM in sustaining competitive advantage and innovation. This suggests that the HRM practices have an impact on employees with developed levels of responsibility for developing, implementing and integrating practices that may facilitate innovation. Additionally, interviews revealed that managers highlighted practices that are valuable to increase levels of commitment, motivation and involvement at work which might indicate a shared awareness of HRM-innovation. Likewise, employees identified that HRM practices are valuable for motivation and commitment and to develop their skills and abilities. These shared observed patterns indicate that employees share a common understanding and awareness towards HRM and innovation. This result, supported by both statistical analysis and interviews points towards a consistent finding of this research for this research question.

RQ1 as presented above is reflected in RQ1a and RQ1b. RQ1a examined the relationship between HRM practices and radical and open innovation. This question represented radical vs incremental innovation as well as innovation approach by adopting open innovation. RQ1b tried to address the differences between departments in terms of whether HRM practices differ within departments. Both RQ1a and RQ1b represent RQ1.

In summary, the research identified a significant relationship between employees' perceptions of HRM practices and innovation. Additionally, employees perceive HRM practices to have significant impact on radical innovation and open innovation. Moreover, the research found that department is not a significant factor in the way employees perceive the relationship of HRM practices to innovation awareness and commitment.

RQ2– To what extent do employees perceive organisational climate to influence their awareness of and commitment to innovation?

Similarly, the impact of organisational climate on radical and open innovation is expected. Organisational climate can create a healthy encouraging environment inside the organisation to allow the processes of idea generation, knowledge exchange, collaboration and implementation of skills and expertise which allows for greater prospects for innovation to take place (Fu *et al.*, 2015; Lepak *et al.*, 2007). For telecommunication industry, the life-cycle of products and the continuity of technological alterations require supportive culture and knowledge sharing (Wright, 2001). Moreover, to introduce successful innovations, organisations need to map what qualities customers are looking for and expecting. In this regards, organisational climate supports a culture and performance that can help in acquiring organisational core competencies (Wright, 2001). Innovative work behaviour as noted by Fu *et al.*, (2015) are directly linked and supported by HPWs and organisational climate.

Cultural perspective might be one variable that led to such results and findings, whereby beliefs on HRM and innovation can stimulate reactions and attitudes towards effective use of resources, the use of abilities, skills, knowledge and creativity, which can all be essential for understanding HRM

and innovation. In line with the research findings from phase one, research also found from phase two that according to managers and employees that culture and performance plays a vital role in creating an environment that is not only suitable for innovation. This result seems to be reasonable since Orange follows a market pull approach, coupled with open innovation, which might increase sensitivity and responsiveness to customer and market demand. One manager indicated that culture is challenging for organisational characteristics in favour of developing a supportive culture for innovation and creativity. This indicates that there is awareness and consideration of the relevance of culture to promote innovation. Culture and performance can be among organisational factors that are determinants for innovation. Although managers and employees priorities HRM practices over organisational climate, they stated that HRM practices shape and form their organisational characteristics. This could explain the knowledge and understanding of organisational climate on innovation, and that Orange considers multiple drivers for innovation. This is expected as innovation is a complex, time consuming and critical activity.

Organisational climate seem to be of a strategic importance for Orange, this finding is suggested by managers and employees where they claimed that organisational climate is adopted and developed to achieve long-term objectives. Employees stated that organisational climate help them to signal that changes in the market and identify customers' needs and to absorb these signals. In addition, results found that employees' willingness to accept change is also a promoter of organisational climate, which shed the light on their awareness to the value of organisational climate. In considering the findings from the quantitative and qualitative results, the significant scores of correlation analysis for organizational climate were further supported by the interviews conducted with managers and employees. Managers and employees stressed the importance and value of organizational climate for promoting innovation, which supports the findings of correlation analysis, which displayed significant values of $r=.637^{**}$ for origins of innovation and $r=.721^{**}$ for radical vs incremental innovation. Similarly, hierarchical multiple regression findings strengthened this observed pattern further. The findings

show significant values for the impact of organizational climate on origins of innovation, and radical vs incremental innovation were $B=0.429$, $p<0.000$ and $B=0.540$, $p<0.000$ respectively.

Results from both phases of research suggest that Orange is a competitive-oriented and innovative-oriented organisation and that can be found based on the significant findings for organisational climate and in similar significant manner from HRM practices. Organisational climate allows more commitment, motivation and involvement for employees towards task performance and innovation.

Additionally, one manager at Orange stated that employees' awareness and understanding of what is expected from them, along with all the managers stated that the differences between employees' abilities and skills form a barrier to HRM practices. Employees indicated that the gap between the actual purpose of HRM practices and the expectations that employees have of HRM practices is a challenge for their HRM. These clarifications might explain significant levels of awareness towards HRM and innovation, and more significantly suggest a distinctive view on HRM and innovation among managers and employees.

Overall, it is proposed by HR scholars (see for example Huselid, 1995; MacDuffie, 1995; Boselie *et al.*, 2005; Shipton *et al.*, 2006; Alfes *et al.*, 2013) that developing and implementing a bundle of HRM practices designed to develop and promote certain behaviours, attitudes at work, skills and abilities. Research findings support this, statistical findings show that a bundle of practices are adopted to promote innovation. Interviews also support this finding as managers and employees claimed that they adopt a bundle of practices.

Research findings are consistent and were able to identify predominant variables that promote innovation awareness and commitment. First, research found that HRM practices and organisational climate promote radical and open innovation. This is confirmed by both phases of research. Managers and employees stressed on the adoption of open innovation and market pull to introduce radical changes.

Secondly, research found that organisational climate have a positive impact on innovation awareness and commitment. Statistical findings were confirmed by observed patterns from the interviews. Significant findings from phase one in this regards were then explained and echoed in managers and employees views of organisational climate that it creates an encouraging environment to promote ideas, skills and knowledge.

Thirdly, research found that departments do not differ in their response to HRM practices and organisational climate. There was no significant impact of departments when measuring HRM-innovation link. This was also confirmed by interviews as managers and employees from different departments claimed a significant role for HRM and innovation. This suggests that the awareness towards innovation within Orange is shared among employees and indicate a homogeneity in viewing the value of HRM, organisational climate and innovation.

Fourth, despite that hygienic factors exhibited positive impact on open innovation, there was no significant impact on radical innovation. Similarly, the research found no impact for expectations and sharing information on radical and open innovation. That might be due to employees focus on radical open innovation which demands more of HPWs and security and health and safety more that other factors of HRM. In addition, motivation and communication also allows the flow of knowledge and ideas to support radical open innovation. It might be that if departments differ in their responses to HRM practices and organisational culture, then expectations and information sharing might have significant impact either positive or negative as this might show that departments demands various factors of HRM.

These findings are not surprising, according to the 'black box' view of HRM. The 'black box' viewpoint on HRM symbolises the nature of the details of the relationship between HRM and other entities within the organisation, such as employee management and organisational resources, as being vague and mysterious and difficult to understand (Guest, 1997; Purcell, 2000). Understanding how HRM practices and systems interact and work paves the

way to the crux of the 'black box'. This box is a murky set of interactions and links between HRM and outcomes. In trying to understand and reveal such linking, Wright and Nishii (2004) proposed a thematic linkage that may explain what HRM systems tend to contribute to organisational outcomes. They stated that the HRM practices designed by the organisation are called 'intended HRM practices', which lead to 'actual HRM practices' that result in 'perceived HRM practices', leading to 'employees' understanding and reactions', resulting finally in organisational outcomes such as innovation. These processes and this proposed chain underpin the expectation of gaps between intended HRM practices designed by management with actions and procedures that can negatively impact employees' attitudes and responses to HRM practices which at the end affect outcomes and performance on innovation. However, these gaps and negative attitudes can exist in any HRM model that organisations adopt, regardless of the level of rewards, compensation, training, employee development, work conditions or pay incentives (Boxall *et al.*, 2011).

Additionally, research findings can be recognised as neutral in studies related to innovation management. Holahan *et al.*, (2014) indicated that, while some practices and organisational arrangements might be positive for one form of innovation, these practices might have no impact or impose negative outcomes on other forms of innovation – for example, having no impact for expectations and sharing information in radical open innovation, and no impact for hygienic factors on radical innovation. Furthermore, the gap between real and anticipated outcomes of HRM practices by management and organisations, and employees' perception of HRM practices, can be challenging in studying HRM-innovation link and create platforms for negative and unexpected outcomes.

In conclusion, the results and outcomes can be summarised as follows:

In the light of the multifaceted activities associated with innovation, employees perceive that there is a relationship between HRM practices and innovation which requires a collective collaboration from various units, departments and resources in the organisation.

The form of this relationship is significant and the direction is positive. More specifically, HRM practices promote radical and open innovation. Moreover, organisational climate also promote radical and open innovation. Within this impact and significant influence, departments have no variation or significance in responding differently to HRM practices and organisational climate. Departments do not differ in their response to HRM practices or organisational climate.

6.4 ORGANISATIONAL IMPLICATIONS OF THE STUDY

The research has focused on the area of HRM practices and innovation and could be beneficial for HR practitioners. Previous studies on HRM and innovation have focused on a limited subset of HRM practices (Zhao *et al.*, 2012; Shipton *et al.*, 2006), while in this study a larger number of HRM practices and their impact on innovation awareness and commitment were considered and studied. Managers can implement more HRM practices to promote innovation. However, managers need to consider the nature of the department and tasks that each department is entitled to perform when considering HRM practices. The study revealed that managers need to be aware of the nature of tasks and HRM practices, as employees differ in their abilities and skills. The study could also help HR managers in explaining and demonstrating to employees, prior to the adoption of specific HRM practices, the purposes and expected outcomes of these practices to minimise any potential gap between employees' expectations of HRM practices and the reality. HRM practices should be viewed and conceptualised as a strategic asset and enabler of multiple activities of the organisation, especially for innovation, rather than perceived as a temporary 'hand to mouth' tool adopted when an obstacle or competition looms.

In addition to its potential implications for HR managers and prediction of the nature of the relationship between HRM practices and innovation, line managers could also benefit from this research. It might be more beneficial for managers to design HRM policies of these practices to minimise any potential gap between employees' expectations of HRM practices and the reality. Managers may also consider HRM policies and practices that can

develop skills, knowledge and abilities and operate in parallel to the current characteristics of the organisation.

The absence of certain HRM practices may result in a negative impact in the workplace (Zanko *et al.*, 2008). Also, the needs and requirements of departments can ease the process of implementing HRM practices: if employees in specific departments require more skills or require new employees in the future this can support a more effective implementation of HRM practices. Furthermore, managers may support the use of networks in their departments as well as promoting employee communication. The embedded skills and knowledge that some employees offer can be maximised and improved by management support (Zanko *et al.*, 2008). Intangible assets and resources that are hidden due to poorly used or unused networks, tacit knowledge, and experience that is inherited within employees can be effectively managed and extracted to enable employees to contribute more professionally and meaningfully to the organisation. In doing so, managers can suggest what practices to adopt in order to ensure high levels of engagement and involvement at work so that employees can use their networks, knowledge, and experience more successfully. The understanding of organisational characteristics is also recommended for the innovation process. In terms of the characteristics of organisational culture, innovative awareness and a value creation culture are highly recommended for innovation practitioners. Moreover, the flexibility of the structure and the need to adjust levels of autonomy for employees or departments is significant for task performance and use of networks. Employees with adequate levels of autonomy are expected to have higher levels of commitment and engagement at work. Similarly, the use of knowledge channels and sharing of knowledge available in employees' mind-sets and from teamwork collaboration is significant for innovation. Knowledge is the leading driver and promoter of ideas, certainty and problem solving. In addition, knowledge can reduce the complexity associated with innovation.

Along with potential benefits and recommendations for HR practitioners and managers, employees can also benefit from research suggestions. For instance, understanding the purpose and outcomes of HRM practices is

essential to meeting organisational expectations and achieving goals (Kellner *et al.*, 2016). Much attention needs to be paid to what can support the implementation of ideas and reduce the time needed for innovation through HRM practices. More effective communication with line managers is also recommended (Den Hartog *et al.*, 2013), as well as more collaboration with employees in other departments. Addressing the support and skills required to perform tasks, as well as understanding specific HRM practices, can also enhance the outcomes of HRM practices in addition to the innovation process (Guest *et al.*, 2012). Also, this research might provide useful propositions for employees in HRM and Sales departments as a great deal of information and data regarding customer and market needs depend on them. Therefore, a wide spectrum of skills and awareness of HRM practices for employees within HRM and Sales departments that may enhance their contribution to innovation are suggested. Developing HRM practices that are specific to or adequate for a given department and associated activities can be beneficial in promoting the relationship between HRM practices and innovation.

Technically, innovation is conceptualised as a complex process that entail high levels of uncertainty (Damanpour *et al.*, 2009). Therefore, this research suggests that innovation management practitioners should consider a wider range of drivers for innovation. The association between HRM practices and innovation suggests that experience gained in innovation should also be reflected in identifying HRM practices that can potentially support innovation. In addition, depending on the nature of the innovation, it should be noted that HRM practices may impose different influences in relation to the nature of innovation activity as well as the departments that contribute to innovation. Drivers of innovation may require practices other than adopting radical or incremental innovation. Thus, a clear distinction between the proposed impact and outcome of innovation activities or desired innovation activity should be considered carefully.

The nature of the relationship between HRM practices and innovation seems to be multifaceted; therefore, managers need to dedicate more time, understanding and consideration to the HRM–innovation link. A potential

implication for organisations and managers is the need to consider the mediating role of other factors in facilitating and exploring the relationship between HRM and innovation. Organisations can also benefit from past experiences and 'learning pools' that can be obtained through other players in the marketplace, especially in the context of adopting open innovation, which may potentially broaden exposure and allow organisations to access unique skills, knowledge, tactics, experience and resources.

6.5 RESEARCH CONTRIBUTIONS

The area of HRM and innovation management has received growing interest from both scholars and managers. However, the majority of existing studies can be characterised as being focused on a limited number of HRM practices that may impact on innovation. This study takes a more holistic approach to the relationship between HRM practices and innovation.

As mentioned earlier, there is a considerable gap in the literature on HRM and innovation management regarding employees' perceptions of HRM practices that can enable and promote innovation. This research offers a number of contributions and advances our understanding of HRM and innovation.

6.5.1 Contributions for Research:

First, this research responded to claims in regard to HRM practices and innovation that there is a need to study employees' perceptions of practices that may influence innovation (Zhao *et al.*, 2012; Shipton *et al.*, 2006; Jimenez and Valle, 2008). Scholars have recognised the importance of HRM to enhancing organisational performance, but rarely the impact of HRM on innovation. Although research on HRM has called for implementation of bundles of practices, previous scholars have studied the impact of HRM practices on innovation by considering a limited subset of HRM practices within the bundle. These practices are narrowed down to training, recruitment, performance appraisal and job design. The distinct contribution of this research is that the potential impact on innovation of a larger number of HRM practices is considered – more specifically, employees' perceptions of the role of HRM practices in promoting innovation in their workplace. HRM practices were considered in this research following the consideration of

existing HRM models (such as the Guest model and the Harvard model) and Armstrong's (2011) *Handbook for Human Resource Management*.

The rationale behind this is to consider a wider and more comprehensive list of HRM practices. This study has shown that there is potential for other HRM practices, in addition to the widely studied practices of training, recruitment, performance appraisal and job design, to influence the introduction of innovation in organisations.

A distinct contribution that this research offers is that it differs from previous studies, which have focused on the macro-level, or inter-organisational level, by studying the impact of HRM practices on innovation from data collected by senior managers and key personnel in the organisations. They examined the policies that organisations adopt as well as reflecting managers' perceptions. However, the contribution of this study is that it has focused on the micro-level, or 'intra-organisational' level, and has looked at the potential impact of HRM practices on employees' awareness of and commitment to innovation based on employees' perceptions of the HRM and innovation link. The distinctness of this contribution has two elements: the first is studying at the intra-organisational level, and the second is studying the perceptions of employees, rather than those of managers, of the impact of HRM practices in relation to innovation, as scholars suggest that one of the challenges for HRM is the difference between how employees perceive HRM practices and what managers actually intend to achieve through these practices. This contribution can provide better insights in understanding the impact of HRM practices on employees and in reducing the gap between expectations of HRM practices outcomes and the reality.

This research contributes distinctly by offering new scale instruments to measure HRM practices. The research has developed new scales representing HRM practices that have not been studied before. In addition, a large number of these scales showed accepted reliability results, indicating that these scales were successful in representing and reflecting these HRM practices and can be used in other studies in the future.

The research also contributes by studying the impact of organisational climate in influencing innovation. As concluded by several previous studies,

innovation is a complex process that requires understanding and realisation of technological, organisational and personal perceptions (Damanpour *et al.*, 1989; Leifer *et al.*, 2000). A number of antecedents are likely to be maintained in order to promote innovation; among these, organisational performance, structure, knowledge and culture-forming organisational characteristics are promoters for innovation (Kuo, 2011; Huselid and Delaney, 1996). This study sheds light on the role of organisational climate in promoting innovation awareness and commitment. In addition to adopting a holistic approach for HRM practices, the study considered internal drivers by studying the role of organisational characteristics. This provides understanding of collective drivers of innovation in addition to allowing to prioritise and compare the likely impact of HRM and other factors – in this study, organisational characteristics – in promoting innovation.

6.5.2 Contributions for Practice and Policy:

In line with innovation management, this research has considered the role of open innovation and the degree of innovativeness in terms of radical vs incremental innovation in studying the impact of HRM practices from employees' perception. No previous studies examined the impact of HRM practices in promoting open or closed innovation in line with radical or incremental innovation. Another contribution of this research is better insights for managers and organisations into possible strategies for innovation management approaches to promote or drive innovation. The research has considered the organisational approach to innovation in studying the impact of HRM. Radical and incremental innovation were considered in this study. The distinction in this study is that previous research did not identify whether innovation takes the form of incremental or radical innovation when studying the potential impact of HRM. Employees perceive that HRM practices promote radical innovation in their organisation. Additionally, market-pull and technology-push approaches were considered. This offers a great opportunity for managers to consider the approaches that best promote innovation. The contribution relating to this consideration is that employees perceived HRM practices to potentially impact on innovation awareness and commitment when the market-pull approach is implemented. This study has

shown that employees' perceive HRM practices to influence open radical innovation in their organisation. Therefore, the research aimed to study employees' perceptions of HRM practices and innovation, which was explored and discussed in Chapters 4, and 5.

Another contribution that this research offers is in studying of the role of different departments in response to HRM practices and innovation awareness and commitment. The research included HRM, Sales, R&D and Product development departments. By doing so, the research attempted to study the differences in responses to and perceptions of HRM practices in their impact on innovation across these departments. This study has shown that HRM practices have no different impacts depending on the department. This contribution tries to extend and broaden the study of the relationship between HRM practices and innovation. The nature of departments and their implementation of HRM practices, along with their contribution to innovation, helped to provide a more holistic picture of the relationship between HRM practices and innovation.

As a technique to fulfil the research aims and objectives, an additional contribution this research offers is the combination of quantitative methods and qualitative methods. Adopting a qualitative method technique, following the use of quantitative methods such as a questionnaire survey, provides broader and deeper understanding of the key issues emerging from the quantitative approach (Silverman, 2006). Statistical findings were investigated in depth, qualitatively, based on the perceptions of key personnel in organisations.

Finally, while most of the previous studies on the relationship between HRM practices and innovation were contextual and mainly in developed countries such as the USA, the UK, Spain and other countries, this study is not limited to a specific context. No contribution was intended based on a contextual perspective. Rather, the study tried to build a conceptual model of which HRM practices potentially impact on employees' awareness of how innovative their organisation is.

6.6 RECOMMENDATIONS FOR FUTURE RESEARCH

Following the research's implications and contribution, a number of possible directions for future research can be proposed. Potential directions for future research arises from the logic, scope, challenges and outlines this research have experienced.

First, similar research studying the relationship between HRM practices and innovation by considering a wide number of HRM practices is highly recommended. Research into employees' perceptions of the relationship between HRM practices and innovation is needed to understand the mechanism by which HRM practices promote innovation. Repeating the research in other companies and sectors, as well as considering a larger number of participants, would have advantages in testing how far the research findings can be generalised. Additionally, future research could broaden and develop the scope of the research instruments. Moreover, in this research, the scales measured specific aspects of each of the HRM practices. Future research on the relationship between HRM practices and innovation could consider other aspects of HRM practices.

Studying the impact of broader HRM practices on innovation is greatly encouraged; the current research attempted to consider large number variables all at once, but future research could still cover a wide range of variables by studying their impact as bundles. This might enable future research to reduce the length of the questionnaire survey and possibly its complexity, and enhance participation.

Linking intra-organisational and inter-organisational levels of the narrative of studies and examining if there are any differences in responses, attitudes and awareness towards innovation could be explored and advanced by future research.

In terms of aspects and typologies of innovation, this research has looked at the relationship between HRM practices and product innovation. Future research could broaden our understanding of the relationship between HRM practices and innovation by considering other types of innovation, such as process innovation and service innovation.

The research was not context specific, aiming to study the impact of Jordanian HRM practices on innovation or solely to study the mechanism of the relationship between HRM practices and innovation in Jordan; rather, it was an attempt to study the relationship between HRM practices and employees' awareness and commitment to product innovation to build a theoretical framework for the potential impact of HRM practices on innovation awareness and commitment. Future research could consider HRM practices based on contextual contribution.

Future research could adopt a different methodological approach to measuring the relationship between HRM practices and innovation. The use of advanced statistical tools such as structural equation modelling (SEM) might explore different aspects of the relationship between HRM practices and innovation. Moreover, qualitative research could involve a larger number of participants in order to gain better understanding of the area of HRM practices and innovation.

Additionally, future research could look at the relationship between HRM practices and innovation by measuring the impact of mediating factors. Future research, for example, could consider the impact of HRM practices on innovation mediated by knowledge or creativity.

To encompass a more complete and integrated framework representing the HRM–innovation links, it is suggested that future research could conduct a similar study on different industries and companies and acquire a larger sample size, which might lead to new findings, in addition to strengthening the findings of this research.

Links to the impact of employees' understanding and perception of HRM practices in promoting their awareness towards innovation should be explored. In addition, studies bridging the gap between employees' understanding and managers' actual expectations of the outcomes of HRM practices should be considered.

Further development of other scales for organisational characteristics is recommended. Organisational climate was measured in this research by

focusing on limited aspects of the organisational characteristics. Future research could consider other aspects of organisational climate.

This research was focused on HRM and innovation. Future research could consider the impact of e-HRM on innovation. Moreover, future research could look at the impact of soft vs hard HRM practices, or best fit vs best practice approaches to HRM. These attempts would enhance the understanding of the nature of the relationship between HRM practices and innovation and might explain the complexity associated with innovation, which might be one of the factors that led to the results of the current research.

This research genuinely highlights the complex and multifaceted data of the relationship between HRM practices and innovation at the intra-organisational level. The dynamics of that interaction within the organisation are complex and further research is needed to explore this in greater depth.

Therefore, the research suggests that these recommendations for further research can be included and merged with a more fundamental direction that can benefit future research. Having said that, the research raises the following question for future research, along with the suggestions mentioned above: do creativity, knowledge, use of networks, commitment and other interrelating factors play a mediating role between HRM practices and innovation awareness and commitment? Would examination of that mediating role identify more consistent and significant variables than the study of direct impact of HRM practices on innovation? In this light, will departments have the same impact on innovation through that mediating role?

6.7 RESEARCH LIMITATIONS

Although the results and findings from this research have generated a number of practical implications, contributions and recommendations for future research, as addressed above in this chapter, the research also contains a number of limitations, which are highlighted below.

Regarding research instruments used in phase one, a wide number of scales were developed for the first time in this research and had not previously been

used or tested in other studies related to HRM and innovation. Moreover, as the study contained a comprehensive list of HRM practices, this may have reduced participants' willingness to participate.

Furthermore, the large number of variables and the scales representing them and the duration of the questionnaire were challenging during the design phase of the questionnaire survey. The large number of variables might have resulted in the conflicting findings and not helped in creating a clear picture of the relationship between HRM practices and innovation.

As the research scope was merely focused on one company in the telecommunications industry, this might have limited our understanding of the relationship between HRM and innovation, particularly for innovation, as it is a complex process. Considering more diverse companies from different sectors or industries and gaining a higher number of respondents might provide better insights and understanding of the nature of the relationship between HRM and innovation. In addition, this could provide a stronger justification for the research results and findings.

Phase two of the research contained a small number of participants. Only three managers were interviewed and seven employees. This limited number may have affected the perceptions and understanding of the quantitative questionnaire survey results. Additionally, this may limit the generalisation of the research findings. More robust support for the research findings and for the research instrument and its scales could have been achieved if a larger number of key personnel or policy makers had participated in the interviews. It seems that managers were not very open and did not provide interesting statements and claims in response to the questions. It is believed that their caution was the result of concerns of confidentiality and competition, despite the fact that issues relating to confidentiality and anonymity were addressed prior to each interview. In some cases, managers were general in their statements, which was challenging for this research, although the questions were designed to be open, rather than being closed questions or leading to specific options to answer from (such as multiple choice), in order to allow participants to cover a wider spectrum of information.

Finally, the research was focused on the relationship between HRM practices and product innovation awareness and commitment. It was limited to product innovation, and thus failed to consider other types of innovation, such as service innovation, process innovation and technological innovation. This limited our understanding of the impact of HRM practices on other forms of innovation; while some variables were insignificant for product innovation, they might be significant for other types of innovation, which could enhance our understanding of the relationship between HRM practices and innovation.

6.8 CONCLUDING REMARKS

First, I would like to note that shifting from civil engineering in my bachelor's degree to business and management studies was very challenging. The shift did not occur in a short time; rather, it took a long journey, mixed with passion and challenges to broaden my knowledge of business studies and challenges in accomplishing this mission. While this thesis has identified that skills, abilities, knowledge, creativity and other factors are vital for innovation and has emphasised that innovation as a source of competitive advantage, others have viewed innovation as a survival tool for organisations. While I was conducting this research and during this journey of learning, I did not view innovation as something crucial for my survival as the researcher; however, my journey itself, in all the steps and stages that I passed through, has contributed to my life and mind-set and will do so for the rest of my life. The journey that I made in pursuing my PhD was full of mixed emotions, and interesting, tiring, frustrating and hopeful moments. I recall that the most difficult part of my PhD was during the first year, when I was not sure yet what the PhD would be like and whether I would make it through this journey or not. Especially in the beginning, there was no clear direction or exact compass for what my research was going to become. I was roaming through the literature, attempting to identify the missing gaps in my research. On the other hand, I can sincerely say that the best part of my PhD is the present moment, as I write these words, knowing that the journey that I have undertaken as a student is near to its end and that the frustration, tiredness, fear and hope will begin to pay off. The knowledge, experience, connections, challenges and self-development gained through conducting this research

are reflected in my own experience and my own life. I do not think that studying HRM or innovation in particular has built up my experience and self-development; rather, I believe that any similar journey in any discipline is likely to develop the researcher and equip him/her with strengths that cannot be bought. For me, my supervisor's way of explaining and demonstrating what changes I needed to make were viewed and digested differently over this journey. In the first year or two, the feedback, according to my understanding, was just to do that. Later on, I started to grasp the reasoning and logic behind the feedback and comments. That helped me a lot in taking a more logical and rational view of my research, and more importantly of the real world. This brilliant ability to recognise such ways of thinking is that of my supervisor David Spicer, to whom I owe a great respect. The way he handled meetings and feedback, I could really enjoy them, because for me, genuinely, I felt that every time I got feedback (despite it was sometimes stressful) I built up more of a logical way of thinking that was not limited to my research area. I think this types of process makes a student, lecturer, school, university or nation more responsible, wise, capable of solving problems and challenges, and respected. The significant distance that I have travelled through the PhD up to this point is reflected not only in my gaining more knowledge of innovation or HRM or even just in my getting a PhD; rather, it has sculpted my reasoning and, most importantly, my way of thinking and view of the world into more logical forms that can form the basis for and start of another journey. To be more precise, it is just the beginning of the actual journey.

References

- Abernathy, W. and Clark, K. 1985. "Innovation: Mapping the winds of creative destruction", *Research policy*, Vol. 14, No. 1, pp.3-22.
- Abernathy, W. and Utterback, M. 1978, "Patterns of industrial innovation", *Technology Review*, Vol. 80, pp. 40-7.
- Abu-Doleh, J. 2000, "The Jordanian financial and manufacturing human resource managers: a profile", *Al-Manarah*, Vol. 6, pp. 57-76.
- Adams, R., Bessant, J., and Phelps, R. 2006, "Innovation management measurement: a review", *International Journal of Management Reviews*, Vol. 8, No. 1, pp. 21-47.
- Afana, G. 2004, "Valuation of employees' job satisfaction in Jordanian banking sector and performance", *Al-Manarah*, Vol. 7, pp. 13-30.
- Ahearne, M., Mathieu, J., and Rapp, A. 2005, "To empower or not to empower your sales force? An empirical examination of the influence of leadership empowerment behavior on customer satisfaction and performance", *Journal of Applied Psychology*, Vol. 90, pp. 945-955.
- Aladwan, K., Bhanugopan, R., and Fish, A. 2013, "A structural equation model for measuring human resource management practices in the Jordanian organisations", *International Journal of Organizational Analysis*, Vol. 21, No. 4, pp. 565-587.
- Albrecht, S. 2010, *Handbook of Employee Engagement: Perspectives, Issues, Research and Practice*, Cheltenham: Edward Elgar Publishers.
- Alfes, K., Truss, C., Soane, E., Rees, C. and Gatenby, M. 2013, "Linking Perceived Supervisor Support, Perceived HRM Practices and Individual Performance: The Mediating Role of Employee Engagement". *Human Resource Management*, Vol. 52, No. 6, pp. 839-859.
- Al-Husan, F., Brennan, R., and James, P. 2009, "Transferring Western HRM Practices to Developing Countries: The Case of a Privatized Utility in Jordan", *Personnel Review*, Vol. 38, No. 2, pp. 104-123.

- Altarawneh, I. 2009, "Training and Development Evaluation in Jordanian Banking Organisations", *Research and Practice in Human Resource Management*, Vol. 17, No. 1, pp. 1–23.
- Anantharaman, R.N. and Paul, A.K. 2003, "Impact of people management practices on organizational performance: analysis of a casual model", *International Journal of Human Resource Management*, Vol. 14, No. 7, pp. 1246–1266.
- Anderson, P. and Tushman, M.L. 1991, "Managing Through Cycles of Technological Change", *Research Technology Management*, Vol. 34, pp. 26–34.
- Anderson, N., Potočník, K. and Zhou, J. 2014, "Innovation and creativity in organizations a state-of-the-science review, prospective commentary, and guiding framework", *Journal of Management*, Vol. 40, No. 5, pp.1297-1333.
- Armstrong, M. 2011, *Armstrong's Handbook of Strategic Human Resource Management*, 5th ed, London: Kogan Page.
- Ataei, V. and Sharifirad, M. 2012, "Organizational culture and innovation culture: exploring the relationships between constructs", *Leadership and Organization Development Journal*, Vol. 33, No. 5, pp. 494–517.
- Atkinson, R.D. and Andes, S. 2010, "The 2010 State Economy Index: Benchmarking Economic Transformation in the States", available:
<<http://www.itif.org/files/2010-state-new-economy-index.pdf>> [20 January 2014].
- Atkinson, C., Taylor., Hall., and Torrington, D. 2011, *Human Resource Management*, 8th ed., London: Pearson Education.
- Atuahene-Gima, K. and Murray, J.Y., 2007, "Exploratory and exploitative learning in new product development: A social capital perspective on new technology ventures in China", *Journal of International Marketing*, Vol. 15, No. 2, pp.1-29.
- Avey, J.B., Luthans, F., Hannah, S.T., Sweetman, D. and Peterson, C., 2012, "Impact of employees' character strengths of wisdom on stress and creative performance", *Human Resource Management Journal*, Vol. 22, No. 2, pp.165-181.

- Baker, W.E., Grinstein, A., and Harmancioglu, N. 2016, "Whose Innovation Performance Benefits More from External Networks: Entrepreneurial or Conservative Firms?" *Journal of Product Innovation Management*, Vol. 33, No. 1, pp. 104-120.
- Ballester, D.E. and Espallardo, H.M. 2009, "Product innovation in small manufacturers, market orientation and the industry's five competitive forces. Empirical evidence from Spain", *European Journal of Innovation Management*, Vol. 12, No. 4, pp. 470–491.
- Bammens, Y.P. 2016, "Employees' Innovative Behavior in Social Context: A Closer Examination of the Role of Organizational Care" *Journal of Product Innovation Management*, Vol. 33, No. 3, pp. 244-259.
- Barney, J.B. 1991, "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17, No.1, pp. 99–120.
- Bassett-Jones, N. 2005, "The paradox of diversity management, creativity and innovation", *Creativity and Innovation Management*, Vol. 14, No. 2, pp. 169–175.
- Beardwell, I. and Claydon, T. 2007, *Human Resource Management: A Contemporary Approach*, 5th ed., Harlow: Prentice Hall.
- Beardwell, L. and Claydon, T. 2010, *Human Resource Management: A Contemporary Approach*, 6th ed. Harlow: Prentice Hall.
- Becker, B.E. and Huselid, M.A. 2006, "Strategic human resources management: where do we go from here?" *Journal of management*, Vol. 32, No. 6, pp.898-925.
- Benson, G.S. 2006, "Employee development, commitment and intention to turnover: a test of 'employability' policies in action", *Human Resource Management Journal*, Vol. 16, No. 2, pp.173-192.
- Beer, M., Spector, B., Lawrence, P.R., Quinn Mills, D., and Walton, R.E. 1984, *Managing Human Assets*, New York: Free Press.
- Berg, B.L. 2007, *Qualitative Research Methods for the Social Sciences*, 6th ed., Boston: Pearson/Allyn & Bacon.

- Brem, A. and Voigt, K.I., 2009. "Integration of market pull and technology push in the corporate front end and innovation management—Insights from the German software industry". *Technovation*, Vol. 29, No. 5, pp.351-367.
- Berry, L., Shankar, V., and Dotzel, V. 2013, "Service innovativeness and firm value", *Journal of Marketing Research*, Vol. 50, No. 2, pp. 259–276.
- Berson, Y., Oreg, S. and Dvir, T., 2008. "CEO values, organizational culture and firm outcomes". *Journal of Organizational Behavior*, Vol. 29, No. 5, pp.615-633.
- Bessant, J., Lamming, R., Noke, H., and Philips, W. 2005, "Managing innovation beyond the steady state", *Technovation*, Vol. 25, No. 12, pp. 1366–1376.
- Birdi, K., Leach, D. and Magadley, W., 2016, "The relationship of individual capabilities and environmental support with different facets of designers' innovative behaviour", *Journal of Product Innovation Management*, Vol. 33, No. 1, pp.19-35.
- Birkinshaw, J., Hamel, G., and Mol, M.J. 2008, "Management innovation", *Academy of Management Review*, Vol. 33, No. 4, pp. 825–845.
- Björkman, I., Ehrnrooth, M., Mäkelä, K., Smale, A. and Sumelius, J., 2013, "Talent or not? Employee reactions to talent identification", *Human Resource Management*, Vol. 52, No. 2, pp.195-214.
- Blaikie, N. 2003, *Analyzing Quantitative Data*, London: Sage Publications.
- Bohlmann, J.D., Spanjol, J., Qualls, W.J. and Rosa, J.A., 2013, "The interplay of customer and product innovation dynamics: an exploratory study", *Journal of Product Innovation Management*, Vol. 30, No. 2, pp.228-244.
- Boer, H. and During, W.E. 2001, "Innovation, what innovation? A comparison between product, process and organizational innovation", *International Journal of Technology Management*, Vol. 22, Nos. 1–3, pp. 83–107.
- Boon, C. and Kalshoven, K., 2014. "How High-Commitment HRM Relates to Engagement and Commitment: The Moderating Role of Task Proficiency". *Human Resource Management*, Vol. 53, No. 3, pp.403-420.

Bornay-Barrachina, M., la Rosa-Navarro, D., López-Cabrales, A. and Valle-Cabrera, R., 2012, "Employment relationships and firm innovation: the double role of human capital", *British Journal of Management*, Vol. 23, No. 2, pp.223-240.

Boselie, P., Dietz, G. and Boon, C. 2005, "Commonalities and contradictions in HRM and performance research", *Human resource management journal*, Vol. 15, No.3, pp.67-94.

Bouncken, R. B., Fredrich, V., Ritala, P. and Kraus, S. 2017, "Coopetition in New Product Development Alliances: Advantages and Tensions for Incremental and Radical Innovation", *British Journal of Management*, Vol. 00, pp. 1-20

Bowen, D.E., 2016, "The changing role of employees in service theory and practice: An interdisciplinary view", *Human Resource Management Review*, Vol. 26, No. 1, pp.4-13.

Boxall, P. 1996, "The strategic HRM debate and the resource-based view of the firm", *Human resource management journal*, Vol. 6, No. 3, pp.59-75.

Boxall, P. and Purcell, J. 2000, "Strategic human resource management: where have we come from and where should we be going", *International Journal of Management Reviews*, Vol. 2, No. 2, pp. 183–203.

Boxall, P. and Purcell, J. 2003, *Strategy and Human Resource Management*, Basingstoke: Palgrave Macmillan.

Boxall, P. and Purcell, J. 2008, *Strategy and Human Resource Management*, 2nd ed., Basingstoke: Palgrave Macmillan.

Boxall, P. and Macky, K., 2009. "Research and theory on high-performance work systems: progressing the high-involvement stream", *Human Resource Management Journal*, Vol. 19, No. 1, pp.3-23.

Boxall, B. and Purcell, J. 2011, *Strategy and Human Resource Management*, 3rd ed., Basingstoke and New York: Palgrave Macmillan.

Boxall, P., Ang, S.H. and Bartram, T., 2011, "Analysing the 'black box' of HRM: Uncovering HR goals, mediators, and outcomes in a standardized service environment", *Journal of Management Studies*, Vol. 48, No. 7, pp.1504-1532.

- Brown, K.G. and Charlier, S.D. 2013, “An integrative model of e-learning use: Leveraging theory to understand and increase usage”, *Human Resource Management Review*, Vol. 23, No.1, pp.37-49.
- Bryman A. 1988, *Quantity and Quality in Social Research*. London: Routledge.
- Bryman, A. 2006, “Integrating quantitative and qualitative research: how is it done?”, *Qualitative research*, Vol. 6, No. 1, pp.97-113.
- Bryman, A. 2012, *Social Research Methods*, 4th ed., Oxford: Oxford University Press.
- Bryman, A. and Bell. E. 2003, *Business Research Methods*, Oxford: Oxford University Press.
- Buffington, J. and McCubbrey, D. 2011. “A conceptual framework of generative customization as an approach to product innovation and fulfilment”, *European Journal of Innovation Management*, Vol. 14, No. 3, pp. 388–403.
- Byron, K., Khazanchi, S., and Nazarian, D. 2010, “The Relationship Between Stressors and Creativity: A Meta-Analysis Examining Competing Theoretical Models”, *Journal of Applied Psychology*, Vol.95, pp. 201–212, in Zhang, J. and Duan, Y. 2010, “The impact of different types of market orientation on product innovation performance. Evidence from Chinese manufacturers”, *Management Decision*, Vol. 48, No. 6, pp. 849–867.
- Cabrales, A.L., Medina, C.C., Lavado, A.C. and Cabrera, R.V. 2008, “Managing functional diversity, risk taking and incentives for teams to achieve radical innovations”, *R&D Management*, Vol. 38, No, 1, pp.35-50.
- Cabrales, A., L., and Cabrera, R. 2009, “Knowledge as a mediator between HRM practices and innovative activity”, *Human Resource Management*, Vol. 48, No. 4, pp. 485–503.
- Camps, J., Oltra, V., Aldás-Manzano, J., Buenaventura-Vera, G. and Torres-Carballo, F. 2016, “Individual Performance in Turbulent Environments: The Role of Organizational Learning Capability and Employee Flexibility”, *Human Resource Management*, Vol 55, No. 3, pp. 363-383.

- Carson, D., Gilmore, A., Gronhaug, K., and Perry, C. 2001, *Qualitative Marketing Research*, London: Sage Publications.
- Carmeli, A. and Tischler, A. 2004, "The relationship between intangible organizational elements and organizational performance", *Strategic Management Journal*, Vol. 25, pp. 1257–1278.
- Cassiman, B. and Veugelers, R. 2006, "In search of complementarity in innovation strategy: internal R&D and external knowledge acquisition", *Management Science*, Vol. 52, No. 1, pp. 68–82.
- Cavagnoli, D. 2011, "A conceptual framework for innovation: An application to human resource management policies in Australia", *Innovation: Management, Policy & Practice*, Vol. 13, No. 1, pp. 111–125.
- Chang, E. 2005, "Employees' overall perception of HRMeffectiveness", *Human relations*, Vol. 58, No. 4, pp.523-544.
- Chenavaz, R. 2012, "Dynamic pricing, product and process innovation", *European Journal of Operational Research*, Vol. 222, No. 3, pp. 553–557.
- Chen, T., Li, F. and Leung, K., 2016, "When Does Supervisor Support Encourage Innovative Behavior? Opposite Moderating Effects of General Self-efficacy and Internal Locus of Control", *Personnel Psychology*, Vol. 69, No. 1, pp.123-158.
- Chesbrough, H. and Rosenbloom, R.S. (2002), "The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies", *Industrial and Corporate Change*, Vol. 11, No. 3, pp. 529–555
- Chesbrough, H. 2003, "The Era of Open Innovation", *Sloan Management Review*, Vol. 44, No. 3, pp. 35–41.
- Chesbrough, H. 2006, *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Boston: Harvard Business School Press.
- Chiva, R., Alegre, J., and Lapiedra, R. 2006, "A measurement scale for product innovation performance", *European Journal of Innovation Management*, Vol. 9, No. 4, pp. 333–346.

Chiva, R., Ghauri, P. and Alegre, J., 2014, "Organizational learning, innovation and internationalization: A complex system model", *British Journal of Management*, Vol. 25, No. 4, pp.687-705.

Chowhan, J. 2016, "Unpacking the black box: understanding the relationship between strategy, HRM practices, innovation and organizational performance", *Human Resource Management Journal*, Vol. 26, No. 2, pp. 112-133.

Christensen, C.M. 1997, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston: Harvard Business School Press

Claydon, T. and Beardwell, J. 2007, *Human Resource Management: A Contemporary Approach*, 5th ed., Harlow: Pearson Education Limited.

Colbert, B. 2004, "The complex resource-based view: implications for theory and practice in strategic human resource management", *Academy of Management Review*, Vol. 29, No. 3, pp. 341–358.

Collings, D.G., 2014, "Toward mature talent management: Beyond shareholder value", *Human Resource Development Quarterly*, Vol. 25, No. 3, pp.301-319.

Collis, J. and Hussey, R., 2013. *Business research: A practical guide for undergraduate and postgraduate students*, 2nded, Basingstoke: Palgrave Macmillan.

Colombo, M. and Cassiman, B. 2006, *Mergers and Acquisition: The innovation Impact*. Camberley: Edward Elgar Publications.

Colquitt, J., LePine, J.A. and Wesson, M.J. 2009, *Organizational Behavior: Improving Performance and Commitment in the Workplace*, New York: McGraw-Hill Irwin.

Combs, J., Liu, Y., Hall, A. And Ketchen, D. 2006, "How Much Do High Performance Work Practices Matter? A Meta-Analysis of Their Effects on Organizational performance", *Personnel Psychology*, Vol. 59, No. 3, pp. 501-528

Cooper, J.R. 1998, "A multidimensional approach to the adoption of innovation", *Management Decision*, Vol. 36, No. 8, pp. 493–502.

- Creswell, J. 2003, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, London: Sage Publications.
- Creswell, J.W., 2009. Research design. *Qualitative, quantitative and mixed methods approaches*. 3rd ed. London: Sage Publications.
- Creswell, J.W., 2014. *A concise introduction to mixed methods research*. London: Sage Publications.
- Crossan, M.M. and Apaydin, M., 2010, “A multi-dimensional framework of organizational innovation: A systematic review of the literature”, *Journal of management studies*, Vol. 47, No. 6, pp.1154-1191.
- Cuevas-Rodríguez, G., Cabello-Medina, C. and Carmona-Lavado, A., 2014, “Internal and external social capital for radical product innovation: do they always work well together?”, *British Journal of Management*, Vol. 25, No. 2, pp.266-284.
- Curran, B. and Walsworth, S., 2014. “Can you pay employees to innovate? Evidence from the Canadian private sector”. *Human Resource Management Journal*, Vol. 24, No. 3, pp.290-306.
- Daft, R.L. 1978, “Dual-core model of organizational innovation”, *Academy of Management Journal*, Vol. 21, No. 2, pp. 193–210.
- Damanpour, F. and Evan, W.M. 1984, “Organizational innovation and performance: the problem of ‘organizational lag’”, *Administrative Science Quarterly*, Vol. 29, No. 3, pp. 392–402.
- Damanpour, F. 1987, “The adoption of technological, administrative and ancillary innovations: impact of organizational factors”, *Journal of Management*, Vol. 13, No. 4, pp. 675–88.
- Damanpour, F., Szabat, K.A. and Evan, W.M., 1989, “The relationship between types of innovation and organizational performance”, *Journal of Management studies*, Vol. 26, No. 6, pp.587-602.
- Damanpour, F. 1991, “Organizational innovation: a meta-analysis of effects of determinants and moderators”, *Academy of Management Journal*, Vol. 34, No. 3, pp. 555–590.

- Damanpour, F. 1996, "Organisational complexity and innovation: developing and testing multiple contingency models", *Management Science*, Vol. 12, No. 5, pp. 693–716.
- Damanpour, F., Walker, R., and Avellaneda, C. 2009, Combinative effects of innovation types and organisational performance: a longitudinal study of service organisations", *Journal of Management Studies*, Vol. 46, No. 4, pp. 650–675.
- Damanpour, F. 2010, "An Integration of Research Findings of Effects of Firm Size and Market Competition on Product and Process Innovations", *British Journal of Management*, Vol. 21, pp. 996–1010.
- Damanpour, F. and Aravind, D. 2011, "Managerial Innovation: Conceptions, Processes, and Antecedents", *Management and Organization Review*, Vol. 8, No. 2, pp. 423–454.
- Danneels E. 2002, "The dynamics of product innovation and firm competences", *Strategic Management Journal*, Vol. 23, No. 12, pp. 1095–1121.
- Danneels, E., 2004, "Disruptive technology reconsidered: A critique and research agenda", *Journal of product innovation management*, Vol. 21, No. 4, pp.246-258.
- Darwish, A.Y. 1998, "Satisfaction with job security as a predictor of organizational commitment and job performance in a multicultural environment", *International Journal of Manpower*, Vol. 19, No. 3, pp. 184–194.
- Darwish, T., Singh, S., and Mohamed, F. 2013, "The role of strategic HR practices in organisational effectiveness: an empirical investigation in the country of Jordan", *The International Journal of Human Resource Management*, Vol. 24, No. 17, pp. 3343–3362.
- Darroch, J., 2005. "Knowledge management, innovation and firm performance", *Journal of knowledge management*, Vol. 9, No. 3, pp.101-115.
- Davenport, T.H., 1993. *Process innovation: reengineering work through information technology*. Harvard Business Press.
- Dawson, J., Birdi, K., and Patterson, M. 2006, "HRM as a predictor of innovation", *Human Resource Management Journal*, Vol. 16, No. 1, pp. 3–27.

- Delaney, J. and Huselid, M. 1996, "The impact of human resources management practices on perceptions of organizational performance", *Academy of Management Journal*, Vol. 39, No. 4, pp. 949–969.
- Delery, J.E. and Shaw, J.D., 2001, "The strategic management of people in work organizations: Review, synthesis, and extension", *Research in personnel and human resources management*, Vol. 20, pp. 165-197.
- Den Hartog, D.N., Boon, C., Verburg, R.M. and Croon, M.A., 2013, "HRM, communication, satisfaction, and perceived performance a cross-level test", *Journal of Management*, Vol. 39, No. 6, pp.1637-1665.
- De Vos, A. and Meganck, A., 2009, "What HR managers do versus what employees value: Exploring both parties' views on retention management from a psychological contract perspective", *Personnel Review*, Vol. 38, No. 1, pp.45-60.
- Dobni, B.C. 2008, "Measuring innovation culture in organizations", *European Journal of Innovation Management*, Vol. 11, No. 4, pp. 539–559.
- DOS 2013, "Department of Statistics, 2013, Amman-Jordan", available: http://www.dos.gov.jo/dos_home_a/main/Demograghy/2013/2–6.pdf [16 July 2014].
- Dougherty, D. and Hardy, C. 1996, "Sustained product innovation in large, mature organizations: overcoming innovation-to-organization problems", *Academy of Management Journal*, Vol. 39, No. 5, pp. 1120–1153.
- Dyne, L.V., Ang, S. and Botero, I.C., 2003, "Conceptualizing employee silence and employee voice as multidimensional constructs", *Journal of Management Studies*, Vol. 40, No.6, pp.1359-1392.
- Edgar, F. and Geare, A. 2005, "HRM practice and employee attitudes: different measure –different results", *Personnel Review*, Vol. 34, No. 5, pp. 534–622.
- Edgar, F. and Geare, A. 2009, "Inside the 'black box' and 'HRM'", *International Journal of Manpower*, Vol. 30, No. 3, pp. 220–236.

Ehrnrooth, M. and Björkman, I., 2012, “An integrative HRM process theorization: Beyond signalling effects and mutual gains”, *Journal of Management Studies*, Vol. 49, No. 6, pp.1109-1135.

Eisenhardt, K.M., Pelled, L.H., and Xin, K.R., 1999, “Exploring the black box: An analysis of work group diversity, conflict and performance”, *Administrative science quarterly*, Vol. 44, No. 1, pp.1-28.

Eisenhardt, K.M. and Martin, J.A. 2000, “Dynamic capabilities: what are they?”, *Strategic Management Journal*, Special Issue Vol. 21, Nos. 10–11, pp. 1105–1121.

Esen, D., Esen, M. and Ozbag, G.K. 2013, “The Impact of HRM Capabilities on Innovation Mediated by Knowledge Management Capability”, *Procedia-Social and Behavioral Sciences*, Vol. 99, pp. 784–793.

Enkel, E. and Gassmann, O. 2008, Driving open innovation in the front end. The IBM case. Working Paper University of St. Gallen and Zeppelin University, St. Gallen and Friedrichshafen.

Ettlie, J.E., Bridge, W.P., and O’Keefe, R.O. 1984, “Organisational strategy and structural differences for radical versus incremental innovation”, *Management Science*, Vol. 30, No. 6, pp. 682–695.

Evans, W.R. and Davis, W.D. 2005, “High-performance work systems and organizational performance: the mediating role of internal social structure”, *Journal of Management*, Vol. 31, No. 5, pp. 758-775

Fenech, J. and Tellis, G.J., 2016, “The Dive and Disruption of Successful Current Products: Measures, Global Patterns, and Predictive Model”, *Journal of Product Innovation Management*, Vol. 33, No. 1, pp.53-68.

Ferguson, K.L. and Reio, T.G. Jr, T.M. 2010, “Human resource management systems and firm performance”, *Journal of Management Development*, Vol. 29, No. 5, pp. 471–494.

Forés, B. and Camisón, C., 2016, “Does incremental and radical innovation performance depend on different types of knowledge accumulation capabilities and organizational size?”, *Journal of Business Research*, Vol. 69, No. 2, pp.831-848.

- Francis, D. and Bessant, J. (2005), "Targeting innovation and implications for capability development", *Technovation*, Vol. 25, No. 3, pp. 171–83.
- Friedmann, C., Holtbrugge, D., and Puck, J. 2010, "Recruitment and retention in foreign firms in India: a resource-based view", *Human Resource Management*, Vol. 49, No. 3, pp. 439–455.
- Fu, N. 2013, "Exploring the impact of high performance work systems in professional service firms: a practices-resources-uses-performance approach", *Consulting Psychology Journal: Practice and Research*, Vol. 65, No. 3, p. 240.
- Fu, N., Flood, P., Bosak, J., Morris, T., and O'Regan, P. 2015, "How do high performance work systems influence organizational innovation in professional service firms?" *Employee Relations*, Vol. 37 No 2, pp. 209–231
- Gassmann, O., 2006, "Opening up the innovation process: towards an agenda", *R&D Management*, Vol. 36, No. 3, pp.223-228.
- George, G., McGahan, A.M. and Prabhu, J., 2012. "Innovation for inclusive growth: Towards a theoretical framework and a research agenda". *Journal of management studies*, Vol. 49, No. 4, pp.661-683.
- Gibb, S., 2001, "The state of human resource management: evidence from employees' views of HRM systems and staff", *Employee Relations*, Vol. 23, No. 4, pp.318-336.
- Gibson, C.B., Porath, C.L., Benson, G.S. and Lawler III, E.E., 2007, "What results when firms implement practices: the differential relationship between specific practices, firm financial performance, customer service, and quality", *Journal of Applied Psychology*, Vol. 92, No. 6, p.1467.
- Gill, J. and Johnson, P. 2002, *Research Methods for Managers*, Sage Publications.
- Gray, D. 2009, *Doing Research in the Real World*, 2nd ed., London: Sage Publications.
- Golder, P.N. and Tellis, G.J., 1997, "Will it ever fly? Modeling the takeoff of really new consumer durables", *Marketing Science*, Vol. 16, No. 3, pp.256-270.

- Goris, J.R., 2007, "Effects of satisfaction with communication on the relationship between individual-job congruence and job performance/satisfaction", *Journal of Management Development*, Vol. 26, No. 8, pp.737-752.
- Guest, D. 1987, "Human resource management and industrial relations", *Journal of Management Studies*, Vol. 24, No. 5, pp. 503–521.
- Guest, D. and Hoque, K. 1994, "The good, the bad, and the ugly: employment relations in new non-union workplaces", *Human Resource Management*, Vol. 5, pp. 1–14.
- Guest, D. 1997, "Human resource management and performance: a review and research agenda", *International Journal of Human Resource Management*, Vol. 8, No. 3, pp. 263–290.
- Guest, D.E., Paauwe, J. and Wright, P. eds., 2012. *HRM and performance: Achievements and challenges*. John Wiley & Sons.
- Gupta, A.K., and Singhal, A. 1993, "Managing Human Resources for Innovation and Creativity", *Research Technology Management*, Vol. 36, pp. 41–48.
- Hair, J.F., Celsi, M.W., Money, A.H., Samouel, P., and Page, M.J. 2003, *Essentials of Business Research Methods*. New York: ME Sharpe.
- Hair, J. F., Black, B., Babin, B., Anderson, R. E., and Tatham, R. L. 2007, *Multivariate Data Analysis, 7th edition*. Upper Saddle River, NJ: Prentice Hall
- Hauff, S., Alewell, D. and Hansen, N., 2016, "HRM system strength and HRM target achievement-towards a broader understanding of HRM processes", *Human Resource Management*, Vol 56, pp. 715-729
- Helgesen, Ø. 2006, "Are loyal customers profitable? Customer satisfaction, customer (action) loyalty and customer profitability at the individual level", *Journal of Marketing Management*, Vol. 22, pp. 245–266.
- Hendry, C. and Pettigrew, A.M. 1990, "Human Resource Management: an agenda for the 1990s", *International Journal of Human Resource Management*, Vol. 1, No. 1, pp. 17–43.

Herrmann, A., Tomczak, T. and Befurt, R., 2006, "Determinants of radical product innovations", *European Journal of Innovation Management*, Vol. 9, No.1, pp.20-43.

Herzberg, F. 1959, *The motivation to work*, New York: Wiley and Sons

Herzberg, F. 2003, "One more time: How do you motivate employees?", *Harvard Business Review*. Vol. 81, No. 1, pp. 87-96.

Hinkin, T. R., Tracey, J. B., and Enz, C. A. 1997, "Scale construction: Developing reliable and valid measurement instruments", *Journal of Hospitality and Tourism Research*, Vol. 21, No. 1, pp. 100-120.

Hippel, E. 1994, "'Sticky Information' and the Locus of Problem Solving: Implications for Innovation", *Management Science*, Vol. 40, pp. 429–439.

Hogan. S. and Coote, L.V. 2014, "Organizational culture, innovation, and performance: A test of Schein's model", *Journal of Business Research*, Vol. 67, No. 8, pp. 1609–1621.

Hoonsopon, D. and Ruenrom, G. 2009, "The empirical of the impact of product innovation factors on the performance of new products: Radical and Incremental product innovation", *The Business Review Cambridge*, Vol. 12, pp. 155–162.

Hoonsopon, D. and Ruenrom, G. 2012, "The Impact of Organizational Capabilities on the Development of Radical and Incremental Product Innovation and Product Innovation Performance", *Journal of Managerial Issues*, Vol. 24, No. 3, pp. 250–276.

Holahan, P.J., Sullivan, Z.Z. and Markham, S.K., 2014, "Product development as core competence: How formal product development practices differ for radical, more innovative, and incremental product innovations", *Journal of Product Innovation Management*, Vol. 31, No. 2, pp.329-345.

Howell, J.M. and Higgins, C.A. 1990, "Champions of technological innovation", *Administrative Science Quarterly*, Vol. 35, pp. 317–30.

Hughes, A., Xiaolan, F., and Cosh, A. 2012, "Organisation structure and innovation performance in different environments", *Small Business Economics*, Vol. 39, pp. 301–317.

- Huselid, M.A., 1995, "The impact of human resource management practices on turnover, productivity, and corporate financial performance", *Academy of management journal*, Vol. 38, No. 3, pp.635-672.
- Huselid, M.A., and Delaney, J.T.1996, "The impact of human resource management practices on perceptions of organizational performance", *Academy of Management journal*, Vol. 39, No. 4, pp.949-969.
- Inauen, M. and Wicki, S., 2012, "Fostering radical innovations with open innovation", *European Journal of Innovation Management*, Vol. 15, No. 2, pp.212-231.
- Jackson, S. and Bantel, K. 1989, "Top management and innovations in banking: Does the composition of the top team make a difference?", *Strategic Management Journal*, Vol. 10, No. 1, pp. 107–124.
- Jain, H., Mathew, M., and Bedi, A. 2012, "HRM innovations by Indian and foreign MNCs operating in India: a survey of HR professionals", *The International Journal of Human Resource Management*, Vol. 23, No. 5, pp. 1006–1018.
- Jansen, J.P. Bosch, V.D., and Volberda, H. 2006, "Explorative innovation, exploitative innovation, and performance: effects of organizational antecedents and environmental moderators", *Management Science*, Vol. 52, No. 11, pp. 1661–1674.
- Janssen, O. 2000, "job demands, perceptions of effort–reward fairness and innovative work behavior", *Journal of Occupational and Organizational Psychology*, Vol. 73, pp. 287-302.
- Jiang, K., Lepak, D.P., Han, K., Hong, Y., Kim, A. and Winkler, A.L., 2012, "Clarifying the construct of human resource systems: Relating human resource management to employee performance", *Human Resource Management Review*, Vol. 22, No. 2, pp.73-85.
- Jimenez, D. and Valle, R. 2005, "Innovation and human resource management fit: an empirical study", Vol. 26, No. 4, pp. 364–398.

- Jimenez, D. and Valle, R. 2008, "Could HRM support organizational innovation?", *The International Journal of Human Resource Management*, Vol. 19, No. 7, pp. 1208–1221.
- Jimenez, D., Valle, R., and Valencia, J.C. 2010, "Organisational culture as determinant of product innovation", *European Journal of Innovation Management*, Vol. 13, No. 4, pp. 466–480.
- Jiménez-Jiménez, D. and Sanz-Valle, R., 2011, "Innovation, organizational learning, and performance", *Journal of business research*, Vol. 64, No. 4, pp.408-417.
- Johnson, G., Whittington, R., and Scholes, K. 2011, *Exploring Strategies: Texts and Cases*, 9th ed., Harlow: Prentice Hall.
- Jong, D. And Hartog, D. 2010, "Measuring Innovative Work Behaviour", *Creativity and Innovation Management*, Vol. 19, No. 1, pp. 23-36.
- Kahane, L. 2001, *Regression Basics*, London: Sage Publications.
- Katou, A.A., Budhwar, P.S. and Patel, C., 2014, "Content vs. process in the HRM-performance relationship: An empirical examination", *Human Resource Management*, Vol. 53, No. 4, pp.527-544.
- Kellner, A., Townsend, K., Wilkinson, A., Greenfield, D., and Lawrence, S., 2016, "The message and the messenger: Identifying and communicating a high performance "HRM philosophy", *Personnel Review*, Vol. 45, No. 6, pp.1240-1258.
- Keng Boon, O., Arumugam, V., Samaun Safa, M. and Abu Bakar, N., 2007, "HRM and TQM: association with job involvement". *Personnel Review*, Vol. 36, No. 6, pp.939-962.
- Ketata, I., Sofka, W. and Grimpe, C., 2015, "The role of internal capabilities and firms' environment for sustainable innovation: evidence for Germany", *R&D Management*, Vol. 45, No. 1, pp.60-75.
- Khilji, S.E. and Wang, X., 2006. " 'Intended'and 'implemented'HRM: the missing linchpin in strategic human resource management research", *The International Journal of Human Resource Management*, Vol. 17, No. 7, pp.1171-1189.

- Kline P. 1994, *An Easy Guide to Factor Analysis*. London: Routledge.
- Knight, K.E. 1967, "A descriptive model of intra-firm innovation process", *Journal of Management*, Vol. 40, No. 4, pp. 478–496.
- Krausert, A., 2015, "HRM signals for the capital market", *Human Resource Management*,
- Kuo, T-S.2011, "How to improve organizational performance through learning and knowledge", *International Journal of Manpower*, Vol. 32, Nos. 5–6, pp. 581–603.
- Kuvaas, B. and Dysvik, A., 2010. "Does best practice HRM only work for intrinsically motivated employees?". *The International Journal of Human Resource Management*, Vol. 21, No. 13, pp.2339-2357.
- Kyriakopoulos, K., Hughes, M. and Hughes, P., 2016, "The role of marketing resources in radical innovation activity: antecedents and payoffs", *Journal of Product Innovation Management*, Vol. 33, No. 4, pp. 398-417
- Lado, A.A. and Wilson, M.C., 1994, "Human resource systems and sustained competitive advantage: A competency-based perspective", *Academy of management review*, Vol. 19, No. 4, pp.699-727.
- Lambertini, L. and Mantovani, A. 2009, "Process and product innovation by a multiple monopolist: A dynamic approach", *International Journal of Industrial Organization*, Vol. 27, No. 4, pp. 508–518.
- Larsson, A. and Bergfors, M. 2009, "Product and process innovation in process industry: a new perspective on development", *Journal of Strategy and Management*, Vol. 2, No. 3, pp. 261–276.
- Laursen, K., 2002, "The importance of sectoral differences in the application of complementary HRM practices for innovation performance", *International Journal of the Economics of Business*, Vol. 9, No. 1, pp.139-156.
- Laursen, K. and Foss, N.J. 2003, "New Human Resource Management Practices, Complementarities and the Impact on Innovation Performance", *Cambridge Journal of Economics*, Vol. 27, pp. 243–263.

- Laursen, K. and Salter, A., 2006, "Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms", *Strategic management journal*, Vol. 27, No. 2, pp.131-150.
- Lee, Y. and O'Connor, G., 2003, "The impact of communication strategy on launching new products: The moderating role of product innovativeness", *Journal of Product Innovation Management*, Vol. 20, No. 1, pp.4-21.
- Leenders, R.T. and Dolfsma, W.A., 2016, "Social networks for innovation and new product development", *Journal of Product Innovation Management*, Vol. 33, No. 2, pp.123-131.
- Leifer R., McDermott C. M., O'Connor G. C., Peters L. S., Rice M. P., Veryzer R. W., RiceM. 2000, *Radical Innovation*. Boston, MA: Harvard Business School Press.
- LePine, J.A. and Van Dyne, L. 1998, "Helping and voice extra-role behaviors: Evidence of construct and predictive validity", *Academy of Management journal*, Vol. 41, No. 1, pp.108-119.
- Lepak, D. and Snell, S. 2002, "Examining the human resource architecture: the relationships among human capital, employment, and human resource configurations", *Journal of Management*, Vol. 28, No. 4, pp. 517–543.
- Lepak, D.P., Liao, H., Chung, Y. and Harden, E.E., 2006. "A conceptual review of human resource management systems in strategic human resource management research", *Research in Personnel and Human Resources Management*, Vol. 25, pp. 217–271
- Lewis, R.E. and Heckman, R.J. 2006, "Talent Management: A Critical Review", *Human Resource Management Review*, Vol. 16, No. 2, pp. 139–154.
- Liao, Y-S.2006, "Task characteristics as a moderator of the relationship between human resource management control and product innovation", *International Journal of Management*, Vol. 23, No. 2, pp. 348–355.
- Liao, H., Toya, K., Lepak, D.P. and Hong, Y., 2009, "Do they see eye to eye? Management and employee perspectives of high-performance work systems and

influence processes on service quality”, *Journal of Applied Psychology*, Vol. 94, No. 2, p.371.

Li, Y., Zhao, Y. and Liu, Y., 2006, “The relationship between HRM, technology innovation and performance in China”, *International journal of manpower*, Vol. 27, No. 7, pp. 679-697.

Lin, H.F. 2007, “Knowledge sharing and firm innovation capability: an empirical study”, *International Journal of Manpower*, Vol. 28, Nos. 3–4, pp. 315–332.

Lynch, R. and Jin, Z., 2016, “Knowledge and innovation in emerging market multinationals: The expansion paradox”, *Journal of Business Research*, Vol. 69, No. 5, pp.1593-1597.

MacDuffie, J. 1995, “Human resource bundles and manufacturing performance: organisational logic and flexible production systems in the world auto industry”, *Industrial and Labour Relations Review*, Vol. 48, pp. 197–221.

Madsen, T.L. and Leiblein, M.J., 2015, “What Factors Affect the Persistence of an Innovation Advantage?”, *Journal of Management Studies*, Vol. 52, No. 8, pp.1097-1127.

Markovitch, D. G., and P. N. Golder. 2008, “Findings—Using stock prices to predict market events: Evidence on sales takeoff and long-term firm survival”, *Marketing Science*, Vol.27, No. 4, pp. 717–29.

Mamat, M. and Ismail, A. 2012, “The relationship between information, process innovation and organizational performance”, *International Journal of Business and Social Science*, Vol. 3, No. 2, pp. 268–274.

Mathieu, J., Gilson, L., and Ruddy, T. 2006, “Empowerment and team effectiveness: An empirical test of an integrated model”, *Journal of Applied Psychology*, Vol. 91, pp. 97–108

Mattarelli, E. and Tagliaventi, M.R., 2015. “How offshore professionals’ job dissatisfaction can promote further offshoring: Organizational outcomes of job crafting”. *Journal of Management Studies*, Vol. 52, No. 5, pp.585-620.

Mayo, A., 2000, “The role of employee development in the growth of intellectual capital”, *Personnel Review*, Vol. 29, No. 4, pp.521-533.

- McDermott, A.M., Fitzgerald, L., Van Gestel, N.M. and Keating, M.A., 2015, "From bipartite to tripartite devolved HRM in professional service contexts: Evidence from hospitals in three countries", *Human Resource Management*, Vol. 54, No. 5, pp.813-831.
- McDowall, A. and Fletcher, C., 2004, "Employee development: an organizational justice perspective", *Personnel Review*, Vol. 33, No. 1, pp.8-29.
- Meijerink, J.G., Bondarouk, T. and Lepak, D.P., 2016, "Employees as Active Consumers of HRM: Linking Employees' HRM Competences with Their Perceptions of HRM Service Value", *Human resource management*, Vol. 55, No. 2, pp.219-240.
- Meuer, J. 2017, "Exploring the Complementarities Within High-Performance Work Systems: A Set-Theoretic Analysis of UK Firms", *Human Resource Management*, Vol. 56, No. 4, pp. 651-672
- Miles, J. and Shevlin, M. 2001, *Applying Regression and Correlation: A Guide for Students and Researchers*, London: Sage Publications.
- Mitchell, W. and Banbury, C. 1995, "The effect of introducing important incremental innovations on market and business survival", *Strategic Management Journal*, Vol. 16, pp. 161–182.
- Meuer, J., 2016, "Exploring the Complementarities Within High-Performance Work Systems: A Set-Theoretic Analysis of UK Firms", *Human Resource Management*.
- Miron, E., Erez, M. and Naveh, E., 2004. "Do personal characteristics and cultural values that promote innovation, quality, and efficiency compete or complement each other? ". *Journal of organizational behavior*, Vol. 25, No. 2, pp.175-199.
- Mumford, M.D., Scott, G.M., Gaddis, B., and Strange, J.M. 2002, "Leading creative people: Orchestrating expertise and relationships", *Leadership Quarterly*, Vol. 13, No. 6, pp. 705–750.
- Myers, S. and Marquis, D.G. 1969, "Successful industrial innovation: a study of factors underlying the innovation in selected firms", Paper, No. NSF 69-17, National Science Foundation, Washington, DC.

Nadler, D. and Tushman, M. 1997, *Competing by Design: The Power of Organizational Architecture*, Oxford: Oxford University Press.

Narver, J.C. and Slater, S.F. 1990, "The effect of a market orientation on business profitability", *Journal of Marketing*, Vol. 20, October, pp. 20–35.

New support for small business 2014, available:

<<https://www.gov.uk/government/news/supporting-business-david-cameron-announces-new-plans>> [19 January 2014]

Nylund, A. Eric Quintane R. Mitch Casselman B. Sebastian Reiche Petra. 2011, "Innovation as a knowledge based outcome", *Journal of Knowledge Management*, Vol. 15, No. 6, pp. 928–947.

O'Connor, G.C., 2008, "Major innovation as a dynamic capability: A systems approach", *Journal of product innovation management*, Vol. 25, No. 4, pp.313-330.

OECD 1999, *Managing National Innovation Systems*, OECD, Paris.

OECD 2005, *Governance of Innovation Systems*, Vol. 3, Case studies in cross-sectorial policy, OECD, Paris.

OECD 2009, *Innovation in Firms, A Microeconomic Perspective*, OECD, Paris.

Oke, A., Burke, G., and Myers, A. 2007, "Innovation types and performance in growing UK SMEs", *International Journal of Operations & Production Management*, Vol. 27, No. 7, pp. 735–53.

Orange-Jordan 2014, *Orange Services*, available:

<<http://www.orange.jo/en/explore/orange-services.aspx>> [19 July 2014].

Olander, H., Hurmelinna-Laukkanen, P. and Heilmann, P., 2011, "Do SMEs benefit from HRM-related knowledge protection in innovation management?", *International Journal of Innovation Management*, Vol. 15, No. 3, pp.593-616.

Paauwe, J. and Boselie, P. 2005, "HRM and performance: what next?", *Human Resource Management Journal*, Vol. 15, No. 4, pp.68-83.

- Paauwe, J. and Richardson, R. 1997, "Introduction special issue on HRM and Performance", *International Journal of Human Resource Management*, Vol. 8, No. 3, pp.257-262.
- Paladino, A., 2007, "Investigating the drivers of innovation and new product success: a comparison of strategic orientations", *Journal of Product Innovation Management*, Vol. 24, No. 6, pp.534-553.
- Piening, E.P., Baluch, A.M. and Ridder, H.G., 2014, "Mind the Intended-Implemented Gap: Understanding Employees' Perceptions of HRM", *Human Resource Management*, Vol. 53, No. 4, pp.545-567.
- Pil, F.K. and MacDuffie, J.P. 1996, "The adoption of high-improvement work practices", *Industrial Relations*, Vol. 35, No. 3, pp.423-455.
- Pfeffer, J. 1994, *Competitive Advantage Through People*, Boston, MA: Harvard Business School Press.
- Pfeffer, J. 1998, "Seven Practices of Successful Organizations", *California Management Review*, Vol. 40, No. 2, pp. 96–124.
- Porter, M.E. 1985, *The Competitive Advantage: Creating and Sustaining Superior Performance*, New York: Free Press.
- Porter, M.E. 1990, *Competitive Advantage of Nations*, New York: Free Press.
- Probst, T. M. 2003, "Exploring employee outcomes of organizational restructuring: A Solomon four-group study", *Group and Organization Management*, Vol. 28, pp. 416–439.
- Prowse, P. and Prowse, J. 2010, "Whatever happened to human resource management performance?", *International Journal of Productivity and Performance Productivity*, Vol. 59, No. 2, pp. 145–162.
- Puck, J. and Friedmann, C. 2010, "Recruitment and retention in foreign firms in India: A resource based view", *Human Resource Management*, Vol. 49, No. 3, pp. 439–455.

- Purcell, J. 1987, "Mapping Management Styles in Employee Relations", *Journal of Management Studies*, Vol. 24, No. 5, pp.533-548.
- Purcell, J., 1996, "Contingent workers and human resource strategy: Rediscovering the core periphery dimension", *Journal of Professional HRM*, Vol. 5, pp.16-23.
- Purcell, J., Kinnie, N., Hutchinson, S., Rayton, B., and Swart, J. 2003, *Understanding the People and Performance Link: Unlocking the Black Box*, London: Chartered Institute of Personnel and Development.
- Redman, T. and Wilkinson, A. 2006, *Contemporary Human Resource Management: Texts and Cases*, 2nd ed., Harlow: Prentice Hall Publications.
- Reed M. 1985, *New Directions in Organisational Analysis*. London: Tavistock.
- Renwick, D. 2003, "Line manager involvement in HRM: an inside view", *Employee Relations*, Vol. 25, No. 3, pp. 262–280.
- Remenyi, D., Williams, B., Money, A., and Swartz, E., 1998, *Doing research in Business and Management: An Introduction to process and method*. London: Sage Publications.
- Riege, A and M O'Keefe. 2007, "Intra-organizational knowledge drivers in the INPD process: The case of Wattyl Limited", *International Journal of Innovation Management*, Vol. 11, pp.349–378.
- Ritala, P. and Hurmelinna-Laukkanen, P., 2013, "Incremental and radical innovation in coopetition—The role of absorptive capacity and appropriability", *Journal of Product Innovation Management*, Vol. 30, No. 1, pp.154-169.
- Ritala, P., Bouncken, R., and Kraus, S. 2016, "Introduction to coopetition and innovation: Contemporary topics and future research opportunities", *International Journal of Technology Management*, Vol 71, pp. 1-9.
- Robson, C. 2002, *Real world research*, 2nd Edition. Oxford: Blackwell Publishing.
- Rogers, E.M. 1962, *Diffusion of Innovations*. New York: Free Press.

- Rollinson, D., Hook, C., Foot, M. and Handley, J., 1996, "Supervisor and manager styles in handling discipline and grievance: Part two-approaches to handling discipline and grievance", *Personnel review*, Vol. 25, No. 4, pp.38-55.
- Rosegger, G. 1996, *The Economics of Production and Innovation: An Industrial Perspective*, 3rd ed., Oxford: Butterworth-Heinemann.
- Salavou, H. 2002, "Profitability in market-oriented SMEs: does product innovation matter?", *European Journal of Innovation Management*, Vol. 5, No. 3, pp. 164–171.
- Sambrook, S. Jennifer Rowley and Anahita Baregheh.2011, "Towards an innovation type mapping tool", *Management Decision*, Vol. 49, No. 1, pp. 73–86.
- Sanders, K., Dorenbosch, L. and de Reuver, R., 2008, "The impact of individual and shared employee perceptions of HRM on affective commitment: Considering climate strength", *Personnel Review*, Vol. 37, No. 4, pp.412-425.
- Sapsford, R. and Jupp, V. 1996, *Data Collection and Analysis*, London: Sage.
- Saunders, M, Lewis, P. and Thornhill, A. 2003, *Research Methods for Business Students*, 3rd edition. Harlow: Prentice Hall.
- Saunders, M., Lewis, P., and Thornhill, A. 2009, *Research Methods for Business Students*. 5th ed., Harlow: FT Prentice Hall.
- Sayer, A. 2000, *Realism and Social Science*. London: Sage.
- Scarbrough, H. 2003, "Knowledge management, HRM and innovation process", *International Journal of Manpower*, Vol. 24, No. 5, pp. 501–516.
- Schein, E.H. 1992, *Organizational Culture and Leadership*.San Francisco: Jossey-Bass Inc.
- Schindler, P., Blumberg, B., and Cooper, D. 2008, *Business Research Methods: Second European Edition*, Maidenhead: McGraw-Hill Higher Education.
- Schmidt, J.A. and Pohler, D. 2015, "The Impact of Job-Based HR System Differentiation on Firm Performance and Employee Attitudes", In*Academy of Management Proceedings* (Vol. 2015, No. 1, p. 17934). Academy of Management.

- Schreier M.2012. *Qualitative content analysis in practice*. Thousand Oaks, CA: Sage.
- Schumpeter, J.A. 1934, *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*, Cambridge, MA: Harvard University Press.
- Schumpeter, J.A. 1939, *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*, New York: McGraw-Hill.
- Schumpeter, J.A. 1942, *Capitalism, Socialism and Democracy*, New York: Harper & Row.
- Schumpeter, J.A. 1950, *Capitalism, Socialism and Democracy*, New York: Harper and Row.
- Schumpeter, J.A. 1954, *History of Economic Analysis*, New York: Oxford University Press.
- Schumpeter, J.A. 1959, *The Theory of Economic Development*, Cambridge, MA: Harvard University Press.
- Seeck, H. and Diehl, M-R.2016, “A literature review on HRM and innovation – taking stock and future directions”, *International Journal of Human Resource Management*, pp. 1-32.
- Sekaran, U. 2003. *Research Methods for Business: A Skill-building Approach*, 4th ed., New York: Wiley.
- Sels, L. and Winne, S. 2010, “Interrelationships between human capital, HRM and innovation in Belgian start-ups aiming at an innovation strategy”, *The International Journal of Human Resource Management*, Vol. 21, No. 11, pp. 1863–1883.
- Session, K. 1990, “Introducing the Human Resource Management Journal”, *Human Resource Management Journal*, Vol. 1, No. 1, pp. 1–11.
- Sheehan, C. 2005, “A model for HRM strategic integration”, *Personnel Review*, Vol. 24, No. 2, pp. 192–209.

- Shipton, H., Fay, D., West, M., Patterson, M., and Birdi, K. 2005, "Managing people to promote innovation", *Creativity and Innovation Management*, Vol. 14, pp. 118–135.
- Shipton, H., West, M.A., Dawson, J., Birdi, K., and Patterson, M. 2006, "HRM as a Predictor of Innovation", *Human Resource Management Journal*, Vol. 16, pp. 3–27.
- Silverman, D. 2006. *Interpreting qualitative data: Methods for analysing talk, text and interaction*, 3rd ed. Thousand Oaks: Sage.
- Singh, S., Darwish, T.K. and Potočník, K., 2016, "Measuring organizational performance: A case for subjective measures", *British Journal of Management*, Vol. 27, No. 1, pp.214-224.
- Slater, S.F., Mohr, J.J. and Sengupta, S., 2014, "Radical product innovation capability: Literature review, synthesis, and illustrative research propositions", *Journal of Product Innovation Management*, Vol. 31, No. 3, pp.552-566.
- Snape, E. and Redman, T., 2010, "HRM practices, organizational citizenship behaviour, and performance: A multi-level analysis", *Journal of Management Studies*, Vol. 47, No. 7, pp.1219-1247.
- Sood, A. and Tellis, G.J., 2005, "Technological evolution and radical innovation", *Journal of Marketing*, Vol. 69, No. 3, pp.152-168.
- Storey, J. 1989, *New Perspectives on Human Resource Management*, London: Thomson Business Press.
- Storey, J. 1992, *Developments in the Management of Human Resources*, Oxford: Blackwell.
- Storey, J. 1995, *Human Resource Management. A Critical Text*, London: Routledge.
- Storey, J. 2007, *Human Resource Management: A Critical Text*, 3rd ed., London: Thomson.
- Subramony, M., 2009, "A meta-analytic investigation of the relationship between HRM bundles and firm performance", *Human Resource Management*, Vol. 45, No. 5, pp. 745-768.

Tabachnick B.G. and Fidell L.S. 1996, *Using Multivariate Statistics*, 3rd ed., New York: Harper Collins.

Tangirala, S. and Ramanujam, R., 2012, “Ask and you shall hear (but not always): Examining the relationship between manager consultation and employee voice”, *Personnel Psychology*, Vol. 65, No. 2, pp.251-282.

Teece, D.J., Pisano, G., and Shuen, A. 1997, “Dynamic capabilities and strategic management”, *Strategic Management Journal*, Vol.18, No. 7, pp. 509–533.

Teece, D.J. 2007, “Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance”, *Strategic Management Journal*, Vol. 28, No. 13, pp. 1319–1350.

Teece, D.J. 2009, *Dynamic Capabilities and Strategic Management: Organizing for Innovation and Growth*, New York: Oxford University Press.

Tidd, J. 2001, “Innovation management in context: Environment, organization and performance”, *International Journal of Management Reviews*, Vol.3, No. 3, pp. 169–183.

Tidd, J., Pavitt, K. and Bessant, J., 2001. *Managing innovation*. 3rd ed. Chichester: Wiley.

Tidd, J. and Bessant, J. 2009, *Managing Innovation: Integrating Technological, Market and Organizational Change*, 4th ed., Chichester, UK: John Wiley & Sons Ltd.

Thomas, A. B. (2004). *Research skills for management studies*, London: Routledge.

TRC 2012, “Telecommunications Regulatory Commission Jordan”, available:

<[http://www.trc.gov.jo/images/stories/pdf/TRC%20Annual%20Report%20English\(english\).pdf?lang=english](http://www.trc.gov.jo/images/stories/pdf/TRC%20Annual%20Report%20English(english).pdf?lang=english)> [18 July 2014].

Tregaskis, O., Daniels, K., Glover, L., Butler, P. and Meyer, M., 2013, “High performance work practices and firm performance: A longitudinal case study”, *British Journal of Management*, Vol. 24, No. 2, pp.225-244.

Trochim, W.M. 2006, *The Research Methods Knowledge Base*, 3rd ed., Cincinnati, OH: Atomic Dog Publishing.

Trott, P., 2008. *Innovation management and new product development*. Harlow: Pearson education.

Trott, P. 2012, *Innovation Management and New Product Development*, 5th ed., Harlow: Prentice Hall.

Truss, C., Gratton, L., Hope-Hailey, V., McGovern, P., and Stiles, P. 1997, “Soft and hard models of human resource management: a reappraisal”, *Journal of Management Studies*, Vol. 34, No. 1, pp. 53–73.

Tsai, W., 2001, “Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance”, *Academy of management journal*, Vol. 44, No.5, pp.996-1004.

Tung, J. and Wu, H. 2012, “A study of product innovation on firm performance”, *International Journal of Organisational Innovation*, Vol. 4, No. 3, pp. 84–97.

Tushman, M.L. and O'Reilly, C.A. III. 1997, *Winning through Innovation: A Practical Guide to Leading Organizational Change and Renewal*, Boston, MA: Harvard Business Press.

Umniah-Jordan 2014, *Umniah Firsts*, available:

<<http://www.umniah.com/en/explore/umniah-firsts.aspx>> [19 July 2014].

Utterback, J.M. 1971, “The process of technological innovation within the firm”, *Academy of Management Journal*, Vol. 14, No. 1, pp. 75–88.

Utterback, J.M. and Abernathy, W.J. 1975, “A dynamic model of process and product innovation”, *Omega*, Vol. 3, No. 6, pp. 639–657.

Van de Ven, A.H. 1986, “Central problems in the management of innovation”, *Management Science*, Vol. 32, No. 5, pp. 590–607.

Van der Panne, G., Van Beers, C. and Kleinknecht, A., 2003, "Success and failure of innovation: a literature review", *International Journal of Innovation Management*, Vol. 7, No. 3, pp.309-338.

Veryzer, R.W., 1998, "Discontinuous innovation and the new product development process", *Journal of product innovation management*, Vol. 15, No. 4, pp.304-321.

Visnjic, I., Wiengarten, F. and Neely, A., 2016, "Only the brave: Product innovation, service business model innovation, and their impact on performance", *Journal of Product Innovation Management*, Vol. 33, No. 1, pp.36-52.

Von Zedtwitz, M., Corsi, S., Sørberg, P.V. and Frega, R., 2015, "A typology of reverse innovation", *Journal of Product Innovation Management*, Vol. 32, No. 1, pp.12-28.

Watson T.J. 1997, "Theorising Managerial Work: A Pragmatic Pluralist Approach to Interdisciplinary Research", *British Journal of Management*, Vol. 8, pp. 3-8.

West, J. and Gallagher, S., 2006, "Challenges of open innovation: the paradox of firm investment in open-source software", *R&D Management*, Vol. 36, No. 3, pp. 319-331.

Wichitchanya, W. and Durongwatana, S. 2012, "Human resource management and organisational innovation", *The Business Review, Cambridge*, Vol. 20, No. 1, pp. 221–227.

Willmott H.C. 1993, "Breaking the Paradigm Mentality", *Organisation Studies*, Vol. 15 No. 5, pp. 681-719.

Wood, S.J. and Wall, T.D. 2005, "The romance of human resource management and business performance, and the case for big science", *Human Relations*, Vol. 58, No. 4, pp. 429–462.

World Bank Jordan Economic Monitor 2013, available:

<http://www.worldbank.org/content/dam/Worldbank/document/MNA/Jordan_EM_Spring_2013.pdf> [18 July 2014].

Wright, P.M., McMahan, G.C. and McWilliams, A., 1994, "Human resources and sustained competitive advantage: a resource-based perspective", *International journal of human resource management*, Vol. 5, No. 2, pp.301-326.

Wright, P.M., Dunford, B.B. and Snell, S.A. 2001, "Human resources and the resource based view of the firm", *Journal of Management*, Vol. 27, No. 6, pp. 701–721.

Wright, P. M. and Nishii, L. H. 2004, "Strategic HRM and Organizational Behavior: Integrating Multiple Levels of Analysis", Working paper presented at the international seminar on HRM: What's Next? Organized by Erasmus University Rotterdam, June 2004

Wright, P.M., Gardner, T.M., Moynihan, L.M., and Allen, M.R. 2005, "The relationship between HR practices and firm performance: examining casual order", *Personnel Psychology*, Vol. 58, No. 2, pp. 409–446.

Yin, R.K. 2014. *Case Study Research: Design and Methods*. London: Sage Publications.

Zain-Jordan 2014, *Milestones and Awards*, available:

<<http://www.jo.zain.com/english/media/aboutus/Pages/Milestones--and-Awards-.aspx>> [18 July 2014].

Zaltman, G., Duncan, R., and Holbek, J. 1973, *Innovation and Organization*. New York: John Wiley and Sons.

Zaltman, G. 1979, "Truth tests and utility tests", *American Sociological Review*, Vol. 45, pp. 303–312.

Zanko, M., Badham, R., Schubert, M., and Couchman, P. 2008, "Innovation and HRM: absences and politics", *International Journal of Human Resource Management*, Vol. 19, No. 4, pp. 562–581.

Zhang, M.J. 2011, "Firm-level performance impact of IS support for product innovation", *European Journal of Innovation Management*, Vol. 14, No. 1, pp. 118–132.

Zhao, S., Wang, S., and Jiang, J. 2012, “Does HRM facilitate employee creativity and organizational innovation? A study of Chinese firms”, *The International Journal of Human Resource Management*, Vol. 23, No. 19, pp. 4025–4047.

Zhou, Y., Hong, Y. and Liu, J., 2013, “Internal commitment or external collaboration? The impact of human resource management systems on firm innovation and performance”, *Human Resource Management*, Vol. 52, No. 2, pp.263-288.

Appendix 1: Survey Questionnaire

Letter Supporting the Research Questionnaire

Cover Sheet

Motasem Thneibat
University of Bradford School of Management
Emm Lane
Bradford, West Yorkshire, BD9 4JL
Tel: 00447460731831
00962 (0)780400100
Email: m.m.m.thneibat@bradford.ac.uk

Dear Sir/Madam,

I am writing to ask you to participate in completing the enclosed questionnaire. The purpose of this study is to investigate the relationship between HRM practices and product innovation. In addition the role of internal drivers in promoting product innovation will be studied. The research stems from previous studies on HRM practices and innovation which focused on a subset and limited number of HRM practices and their role in promoting innovation. In addition, previous studies have looked at HRM practices and innovation from a macro-level perspective. In the light of this, this research will look at a greater number of HRM practices that have not previously been studied, and investigate their impact on innovation. Also, this research will have a micro-level focus; where all participating companies are in the same industry, measuring employees' awareness of and commitment to innovation, and the departments that contribute more towards innovation will be identified within a single company. Your answers will help in better understanding which HRM practices have an impact on product innovation, as well as how product innovation is sustained. Answers to this questionnaire will form the major part of my PhD thesis at the University of Bradford.

The questionnaire consists of four sections. The first collects demographic information, the second measures innovation awareness and commitment, the third measures HRM practices, and the fourth is about organisational characteristics needed for innovation. The questionnaire will take approximately 20 to 30 minutes to complete. Your help is very much appreciated. Please be assured that confidentiality and anonymity will be maintained throughout and after completion of this project. All responses will be entirely confidential and anonymous and no names will be written on as the forms. Also, none of the participants' responses will be shown to any other department or person. Data collected after your completion of the questionnaire will be kept in a secure place as a soft copy, with limited access by the researcher and supervisor only. Data will be held for up to 10 years. In addition, responses will be analysed and reported in PhD thesis and also in subsequent publications. If you would like to receive a copy of the executive summary of the results and feedback, please write your email address on the separate sheet provided and place in the box when you return your questionnaire. Should you require any further information, or have any concerns, please feel free to contact me through my contact details above.

Demographics:

Please choose from the following:

➤ **Gender:** Male ☐ Female ☐

➤ **Department:**

HRM ☐ Product development ☐ Sales ☐ R&D ☐

➤ **Age:** <20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ >50 ☐

➤ **Level of education:** Bachelor ☐ Master's ☐ PhD ☐ Other ☐

For the following questions, please answer by selecting from 1–5, where 1=strongly disagree, 2=disagree, 3=neither disagree nor agree, 4=agree, 5=strongly agree.	SD	D	N	A	SA
1. Training strives to develop the company's specific skills/knowledge.	1	2	3	4	5
2. I enjoy working for my company.	1	2	3	4	5
3. The recruitment process in this company is comprehensive (interview, tests, etc.).	1	2	3	4	5
4. If I have any kind of grievance I can discuss it with my supervisor.	1	2	3	4	5
5. New products entail minor changes.	1	2	3	4	5
6. Most decisions people make here do not require their supervisor's approval.	1	2	3	4	5
7. I am aware of regulations and policies that state what will happen if I infringe the organisation's rules.	1	2	3	4	5
8. New products entail major changes.	1	2	3	4	5

9. Innovation is developed by copying others' external innovation.	1	2	3	4	5
10. Supernumerary employees are given fair and equitable treatment.	1	2	3	4	5
11. Recruitment in this company focuses on selecting the best, who contribute to company's strategic objectives.	1	2	3	4	5
12. This company offers self-development and skills development sessions and courses.	1	2	3	4	5
13. My job does not allow me to gain more skills.	1	2	3	4	5
14. Individual differences are noticed and recognised in this company more than group differences.	1	2	3	4	5
15. I can be accompanied by a colleague when appealing or raising a grievance.	1	2	3	4	5
16. Promotion is instrumental in encouraging innovation, solving problems and introducing new ideas.	1	2	3	4	5
17. My job is secure in this company.	1	2	3	4	5
18. Quality is the main consideration when developing new products.	1	2	3	4	5
19. Our approach to product innovation is inspired and driven by organisational belief in innovation.	1	2	3	4	5
20. Innovation is developed by minimal usage of external sources and ideas.	1	2	3	4	5
21. If I have any concerns or recommendations about my job I cannot raise them with my boss or supervisor.	1	2	3	4	5
22. In my company, safety comes first.	1	2	3	4	5
23. There is a compensation policy to follow if any loss or damage happens to any individual.	1	2	3	4	5
24. I'm encouraged to use the Internet and email to exchange ideas.	1	2	3	4	5

25. Indirect discrimination takes place when, whether intentionally or not, a condition is applied that adversely affects a considerable proportion of people for who they are (such as religion, or race, or sexual orientation, background or disability).	1	2	3	4	5
26. Consideration and respect are very important in our company.	1	2	3	4	5
27. Unit members do not need to ask their supervisor before they do almost anything.	1	2	3	4	5
28. I know what training, learning, knowledge and information I need to engage in to support performing tasks.	1	2	3	4	5
29. When I face challenges I can communicate with my supervisor.	1	2	3	4	5
30. I perform tasks that allow me to make decisions.	1	2	3	4	5
31. In this company, we engage with complex tasks.	1	2	3	4	5
32. Rewards do not include an extensive benefits package.	1	2	3	4	5
33. Appraisal measures productivity and efficiency.	1	2	3	4	5
34. Training is continuous in this company.	1	2	3	4	5
35. Our approach to product innovation is inspired and driven by customer needs.	1	2	3	4	5
36. Innovation is developed based on internal efforts.	1	2	3	4	5
37. The knowledge that we attain in this company allows us to create differential advantages in the products.	1	2	3	4	5
38. I enjoy the working environment in my company.	1	2	3	4	5
39. I perform jobs that require participating in teamwork.	1	2	3	4	5
40. Line managers are readily accessible when we have problems or need to speak to them.	1	2	3	4	5
41. Differences among employees in this company are treated appropriately by management.	1	2	3	4	5

42. I always try to share and seek information when performing tasks.	1	2	3	4	5
43. My department is usually benchmarked with others.	1	2	3	4	5
44. Appraisal is based on quality of output.	1	2	3	4	5
45. Recruitment places a priority on candidates' skills, knowledge, and experience.	1	2	3	4	5
46. I receive training to increase short-term productivity.	1	2	3	4	5
47. Promotion is awarded when I achieve a complex target, objective or task.	1	2	3	4	5
48. In this company, we are encouraged to share our knowledge especially when an issue arises.	1	2	3	4	5
49. Innovation is developed based on external sources and inputs.	1	2	3	4	5
50. I view uncertainty as an opportunity and not as a risk.	1	2	3	4	5
51. In this company, we know which customers (and/or market segments) will provide the most useful information for future growth.	1	2	3	4	5
52. We take time to understand our competitive environments in order to introduce new products.	1	2	3	4	5
53. We co-define value with customers.	1	2	3	4	5
54. Innovation is a core value in this organisation.	1	2	3	4	5
55. I understand how I contribute to innovation in our company.	1	2	3	4	5
56. In most cases, I try to exploit opportunities to develop creative potential in my department.	1	2	3	4	5
57. Our company offers new products by changing existing ones.	1	2	3	4	5
58. Before taking a decision, my manager will ask me if I have special circumstances or considerations that might affect or bother me while performing the task.	1	2	3	4	5

59. I know what I have to do in my job and what is expected of me.	1	2	3	4	5
60. Our company often offers new products.	1	2	3	4	5
61. Normally, I do not expect sudden decisions.	1	2	3	4	5
62. I'm not disturbed by the behaviour of people around me.					
63. Our company provides a knowledge base that employees can use when developing new ideas.	1	2	3	4	5
64. I do not follow health and safety procedures when I perform tasks.	1	2	3	4	5
65. There is minimal disruption to employees when someone has to leave the company.	1	2	3	4	5
66. There is annual evaluation of the nature of the tasks that I perform.	1	2	3	4	5
67. Diversity is a company policy, with the opportunity for all employees to get recognition and rewards.	1	2	3	4	5
68. We have regular meetings with top management to discuss our needs and interests.	1	2	3	4	5
69. Rewards and compensation in this company are provided to focus on and achieve short-term performance.	1	2	3	4	5
70. Appraisal is based on objective and quantifiable results.	1	2	3	4	5
71. I get paid enough in this company.	1	2	3	4	5
72. I like to work here.					
73. I receive good feedback on my performance.	1	2	3	4	5
74. I use the Internet and email in order to find the information I need.	1	2	3	4	5
75. Our needs are not considered and heard by line managers.	1	2	3	4	5
76. When I face a difficult or complex task, I discuss it with my manager.	1	2	3	4	5

77. When we introduce and implement new ideas and concepts, the company does not offer support.	1	2	3	4	5
78. I perform jobs that require sharing information.	1	2	3	4	5
79. Consideration and respect increase employees' potential to introduce new ideas and solve problems.	1	2	3	4	5
80. Our company provides different channels to support learning and knowledge acquisition that are important for innovation.	1	2	3	4	5
81. Customer satisfaction is the main target when developing new products.	1	2	3	4	5
82. There is a consensus among employees about what creates value for customers.	1	2	3	4	5
83. A person who wanted to make his/her own decisions would be encouraged.	1	2	3	4	5
84. When major decisions have to be made, the supervisor's role is minimal.	1	2	3	4	5
85. I perform tasks that are designed around my skills.	1	2	3	4	5
86. Finding solutions to challenges is rewarded in this company.	1	2	3	4	5
87. I feel I have a future in this company.	1	2	3	4	5
88. Procedures and policies are designed to give employees satisfaction.	1	2	3	4	5
89. My job is interesting.	1	2	3	4	5
90. I'm not given freedom to decide how to do my work.	1	2	3	4	5
91. I get on well with my work colleagues.	1	2	3	4	5
92. I'm very satisfied with the work I do.	1	2	3	4	5
93. My contribution is adequately recognised by my boss.	1	2	3	4	5

94. I get paid extra when I perform well.	1	2	3	4	5
95. If adoption of new technology will lead to redundancies, this is explained before changes are made	1	2	3	4	5
96. In this company, regular sessions are held on the use of new technology.	1	2	3	4	5
97. Appraisal is based on input that employees provide.	1	2	3	4	5
98. Recruitment involves screening job candidates through many stages before offering them the job.	1	2	3	4	5
99. Rewards and compensation are provided based on industry experience.	1	2	3	4	5
100. In this company, we perform tasks that require participation in teams and networks.	1	2	3	4	5
101. I perform a job that includes a wide variety of tasks.	1	2	3	4	5
102. I cannot discuss any matters with my boss.	1	2	3	4	5
103. Working hours is not a criterion in assessing performance.	1	2	3	4	5
104. I have received guidelines concerning flexible working such as working at home.	1	2	3	4	5
105. We are not allowed to browse the Internet or download any material that is not related to work.	1	2	3	4	5
106. The employees' unions in this company are active.	1	2	3	4	5
107. In this company we have a policy for salary review.	1	2	3	4	5
108. Any conflict can be solved through communication and interaction between employees and line managers.	1	2	3	4	5
109. This company uses promotion from within.	1	2	3	4	5
110. I have been promoted within the last three years.	1	2	3	4	5

111.I perform tasks that have a high level of security.	1	2	3	4	5
112.I perform a job that is standardised throughout the industry.	1	2	3	4	5
113.I have been introduced to and provided with health and safety procedures at work.	1	2	3	4	5
114.There are many employees in this company with different backgrounds.	1	2	3	4	5
115.Development, promotion, payment and training are available to all.	1	2	3	4	5
116.Information is always shared when we perform tasks.	1	2	3	4	5
117.This company does not recognise talented and creative employees for future developments.	1	2	3	4	5
118.I have good relations with my colleagues.	1	2	3	4	5
119.The working conditions in this company are good.	1	2	3	4	5
120.Employees will be consulted before new technology is introduced.	1	2	3	4	5
121.I have the right to appeal to a more senior manager against a decision made by an intermediate manager.	1	2	3	4	5
122.I perform a job that is well defined.	1	2	3	4	5
123.Rewards and compensation are used to provide incentives for new ideas.	1	2	3	4	5
124.I can perform my job with a high degree of autonomy.	1	2	3	4	5
125.My job is straightforward and not very stressful.	1	2	3	4	5
126.My job does not give me the chance to complete tasks that I have already started.	1	2	3	4	5
127.When I ask for leave to do something outside work it is approved and understood by my boss.	1	2	3	4	5
128.Grading decisions are made fairly.	1	2	3	4	5

Appendix 2: Scales Items

A- HRM practices Scales Items:

Scale	Items
1- Training	<i>Training strives to develop the company's specific skills/knowledge.</i>
	<i>I know what training, learning, knowledge and information I need to engage in to support performing tasks.</i>
	<i>Training is continuous in this company.</i>
	<i>I receive training to increase short-term productivity.</i>
2- Recruitment	<i>The recruitment process in this company is comprehensive (interview, tests, etc.).</i>
	<i>Recruitment involves screening job candidates through many stages before offering them the job.</i>
	<i>Recruitment in this company focuses on selecting the best, who contribute to the company's strategic objectives.</i>
	<i>Recruitment places a priority on candidates' skills, knowledge, and experience.</i>
3- Performance Appraisal	<i>Appraisal measures productivity and efficiency.</i>
	<i>Appraisal is based on quality of output.</i>
	<i>Appraisal is based on objective and quantifiable results.</i>
	<i>Appraisal is based on input that employees provide.</i>
4- Compensation and Rewards	<i>Rewards and compensation in this company are provided to focus on and achieve short-term performance.</i>
	<i>Rewards and compensation are provided based on industry experience.</i>
	<i>Rewards and compensation are used to provide incentives for new ideas.</i>
	<i>Rewards do not include an extensive benefits package. (R)</i>
5- Employee Development	<i>In this company, we engage with complex tasks.</i>
	<i>This company offers self-development and skills development sessions and courses.</i>
	<i>In this company, we perform tasks that require participation in teams and networks.</i>
6- Job Design	<i>I perform tasks that are designed around my skills.</i>
	<i>I can perform my job with a high degree of autonomy.</i>
	<i>I perform a job that includes a wide variety of tasks.</i>
	<i>I perform tasks that allow me to make decisions.</i>
7- Employee Communication	<i>I cannot discuss any matters with my boss. (R)</i>
	<i>When I face challenges I can communicate with my supervisor.</i>
	<i>If I have any concerns or recommendations about my job I cannot raise them with my boss or supervisor. (R)</i>
8- Absence Management	<i>My job is straightforward and not very stressful.</i>
	<i>My job does not give me the chance to complete</i>

	<i>tasks that I have already started. (R)</i>
	<i>I enjoy working for my company.</i>
9- Talent Management	<i>My job does not allow me to gain more skills. (R)</i>
	<i>This company does not recognise talented and creative employees for future development. (R)</i>
	<i>My department is usually benchmarked with others.</i>
10- Retention Management	<i>I have good relations with my colleagues.</i>
	<i>I get paid enough in this company.</i>
	<i>I like to work here.</i>
	<i>The working conditions in this company are good.</i>
11- Work-life Balance	<i>Working hours are not a criterion in assessing performance.</i>
	<i>I have received guidelines concerning flexible working such as working at home.</i>
	<i>When I ask for leave to do something outside work it is approved and understood by my boss.</i>
12- Job Engagement	<i>My job is interesting.</i>
	<i>I'm not given freedom to decide how to do my work. (R)</i>
	<i>I get on well with my work colleagues.</i>
	<i>I'm very satisfied with the work I do.</i>
13- Recognition	<i>My contribution is adequately recognised by my boss.</i>
	<i>I get paid extra when I perform well.</i>
	<i>Grading decisions are made fairly.</i>
	<i>I receive good feedback on my performance.</i>
14- Health and Safety	<i>I have been introduced to and provided with health and safety procedures at work.</i>
	<i>In my company, safety comes first.</i>
	<i>There is a compensation policy to follow if any loss or damage happens to any individual.</i>
	<i>I do not follow health and safety procedures when I perform tasks. (R)</i>
15- New Technology	<i>If adoption of new technology will lead to redundancies, this is explained before changes are made.</i>
	<i>In this company, regular sessions are held on the use of new technology.</i>
	<i>Employees will be consulted before new technology is introduced.</i>
16- Redundancy	<i>Supernumerary employees are given fair and equitable treatment.</i>
	<i>There is minimal disruption to employees when someone has to leave the company.</i>
	<i>There is annual evaluation of the nature of the tasks that I perform.</i>
17- Diversity Management	<i>Diversity is a company policy, with the opportunity for all employees to get recognition and rewards.</i>
	<i>Individual differences are noticed and recognised in this company more than group differences.</i>
	<i>Differences among employees in this company are treated appropriately by management.</i>
18- Email and Internet	<i>I use the Internet and email in order to find the information I need.</i>

	<i>I'm encouraged to use the Internet and email to exchange ideas.</i>
	<i>We are not allowed to browse the Internet or download any material that is not related to work.</i>
19- Grievances	<i>If I have any kind of grievance I can discuss it with my supervisor.</i>
	<i>I have the right to appeal to a more senior manager against a decision made by an intermediate manager.</i>
	<i>I can be accompanied by a colleague when appealing or raising a grievance.</i>
20- Employee Voice	<i>Our needs are not considered and heard by line managers. (R)</i>
	<i>When I face a difficult or complex task, I discuss it with my manager.</i>
	<i>We have regular meetings with top management to discuss our needs and interests.</i>
	<i>When we introduce and implement new ideas and concepts, the company does not offer support. (R)</i>
21- Equal Opportunity	<i>There are many employees in this company with different backgrounds.</i>
	<i>Development, promotion, payment and training are available to all.</i>
	<i>Indirect discrimination takes place when, whether intentionally or not, a condition is applied that adversely affects a considerable proportion of people for who they are (such as religion, or race, or sexual orientation, background or disability).</i>
22- Employee Relations	<i>The employees' unions in this company are active.</i>
	<i>Any conflict can be solved through communication and interaction between employees and line managers.</i>
	<i>In this company we have a policy for salary review.</i>
	<i>Line managers are readily accessible when we have problems or need to speak to them.</i>
23- Discipline	<i>I perform a job that is well defined.</i>
	<i>I know what I have to do in my job and what is expected of me.</i>
	<i>I am aware of regulations and policies that state what will happen if I infringe the organisation's rules.</i>
24- Promotion	<i>Promotion is instrumental in encouraging innovation, solving problems and introducing new ideas.</i>
	<i>Promotion is awarded when I achieve a complex target, objective, or task.</i>
	<i>This company uses promotion from within.</i>
	<i>I have been promoted within the last three years.</i>
25- Information Sharing	<i>Information is always shared when we perform tasks.</i>
	<i>I always try to share and seek information when performing tasks.</i>
	<i>I perform jobs that require sharing information.</i>

	<i>I perform jobs that require participating in teamwork.</i>
26- Consideration and Respect	<i>Consideration and respect increase employees' potential to introduce new ideas and solve problems.</i>
	<i>Procedures and policies are designed to give employees satisfaction.</i>
	<i>Before taking a decision, my manager will ask me if I have special circumstances or considerations that might affect or bother me while performing the task.</i>
	<i>Consideration and respect are very important in our company.</i>
27- Employee Security	<i>I perform tasks that have a high level of security.</i>
	<i>I perform a job that is standardised throughout the industry.</i>
	<i>I feel I have a future in this company.</i>
	<i>My job is secure in this company.</i>
28- Motivation	<i>Finding solutions to challenges is rewarded in this company.</i>
	<i>Normally, I do not expect sudden decisions.</i>
	<i>I'm not disturbed by the behaviour of people around me.</i>
	<i>I enjoy the working environment in my company.</i>

B- Organisational Characteristics Scales Items:

Scale	Item
1- Organisational Performance	<i>Quality is the main consideration when developing new products.</i>
	<i>Customer satisfaction is the main target when developing new products.</i>
	<i>There is a consensus among employees about what creates value for customers.</i>
	<i>The knowledge that we attain in this company allows us to create differential advantages in the products.</i>
2- Organisational Structure	<i>A person who wanted to make his/her own decisions would be encouraged.</i>
	<i>Most decisions people make here do not require their supervisor's approval.</i>
	<i>When major decisions have to be made, the supervisor's role is minimal.</i>
	<i>Unit members do not need to ask their supervisor before they do almost anything.</i>
3- Organisational Knowledge	<i>Our company provides different channels to support learning and knowledge acquisition that are important for innovation.</i>
	<i>Our company provides a knowledge base that employees can use when developing new ideas.</i>
	<i>In this company, we are encouraged to share our knowledge especially when an issue arises.</i>
4- Organisational Culture	<i>In this company, we know which customers (and/or market segments) will provide the most useful information for future growth.</i>
	<i>We take time to understand our competitive</i>

	<i>environments in order to introduce new products.</i>
	<i>We co-define value with customers.</i>
	<i>Innovation is a core value in this organisation.</i>

C- Innovation Awareness and Commitment Scales Items:

Scale	Items
1- Innovation Willingness	<i>I understand how I contribute to innovation in our company.</i>
	<i>I view uncertainty as an opportunity and not as a risk.</i>
	<i>In most cases, I try to exploit opportunities to develop creative potential in my department.</i>
2- Radical vs Incremental Innovation	<i>Our company offers new products by changing existing ones.</i>
	<i>Our company often offers new products.</i>
	<i>New products entail minor changes.</i>
	<i>New products entail major changes.</i>
3- Origins of Innovation	<i>Innovation is developed based on external sources and inputs.</i>
	<i>Innovation is developed by copying others' external innovation.</i>
	<i>Innovation is developed based on internal efforts.</i>
	<i>Innovation is developed by minimal usage of external sources and ideas.</i>
	<i>Our approach to product innovation is inspired and driven by organisational belief in innovation.</i>
	<i>Our approach to product innovation is inspired and driven by customer needs.</i>

Appendix 3: Semi-Structured Interviews Guide (Managers)

Main Question	Items
Part A: HR/HRM 1-To what extent do you think HR is important for your organisation?	<i>A-Do you adopt individual HRM practices, or a bundle of practices?</i> <i>B-What practices do you adopt?</i> <i>C-Which of these practices do you consider as very important for your employees?</i> <i>D-Why are these practices are prioritised over others?</i>
Part B: Innovation 1-To what extent does your company believe in innovation?	<i>A- How would you describe your company's approach towards innovation (closed or open innovation)?</i> <i>B- How would you describe your company's approach towards innovation (market pull or technology push)?</i> <i>C- What does your company do to promote innovation?</i>
Part C: HRM and Innovation	<i>A- What HRM practices do you adopt to promote innovation?</i> <i>B- What is the importance of these practices?</i> <i>C- How do you draw up HRM practices that are needed for innovation? Based on innovation ideas? Market technology effects? Departmental roles?</i>
Part D: Organisational Characteristics	<i>A- How would you see your organisational characteristics in terms of enhancing company's performance?</i> <i>B- What are the organisational characteristics that your company adopts and relies on to promote innovation?</i>
Part E: HRM and Organisational Characteristics	<i>A- Do you think that HRM practices are affected by your organisational characteristics?</i> <i>B- Do you think that some departments are more affected by or more sensitive to your organisational characteristics?</i> <i>C- Can you identify whether HRM practices or organisational characteristics are more effective in promoting innovation?</i>
Part F: Conclusion 1- Can you identify the barriers to	<i>A- Innovation</i> <i>B- HRM</i> <i>C- Organisational Characteristics</i>
2- Can you identify the promoters (enablers) of	<i>A- Innovation</i> <i>B- HRM</i> <i>C- Organisational Characteristics</i>

Appendix 4: Interviews Transcripts (Managers)

Interview 1

Part A: Q1) IMPORTANCE OF HR

HR plays a vital role in our company. It's the cornerstone for most of our operations and it's the main source of ideas, knowledge and competitive advantage

- A- Well, in our company we implement HRM practices as a collective number of practices rather than individual practices. And we do this because we believe in the importance of HRM practices supporting different organisational functions, mainly performance and the speed of performing tasks
- B- We implement a number of HRM practices, but we focus mainly on recruitment, motivation, performance appraisal, absence management, employee development, job engagement, health and safety at work, retention management and training
- C- Recruitment, motivation, and job engagement are considered to be the most important HRM practices we adopt
- D- These practices are considered to be more important than others as these practices can directly affect and improve employees' performance and commitment. Moreover, we focus on these practices to increase employees' motivation, involvement, abilities and skills

Part B: Innovation

Q1) IMPORTANCE OF INNOVATION

For us, innovation is very very important. Without innovation we cannot compete or even survive in this industry. We face intense competition, and innovation is the only way that we can survive through it. The telecommunications industry faces very rapid changes in products and services, intense competition and most importantly continuous improvements and innovation all the time. Sometimes, we are shocked by other competitors in terms of the speed of their introduction of innovative products and services, so we try to always stay on the leaderboard and be first movers in the market. However, despite all the belief we have in the importance of innovation and all the efforts we make and resources we acquire for innovation, I believe there is always more to add for innovation.

- A- We do not define or stick to one approach towards innovation, because we might lose many opportunities by omitting other approaches. But I can tell you that we mainly follow an open innovation approach more than closed innovation. Open innovation allows us to acquire more resources and knowledge. Also, open innovation helps us in reducing complexity associated with innovation. Closed innovation is used in minor improvements or developments in products and services. Also, closed innovation can be used for both minor changes and major changes in products.
- B- In this company, we do engage in different approaches to adopting innovation. In addition to open innovation, we try to follow a combined approach involving both market pull and technology push, in order to introduce innovation, understand market needs and satisfy our customers. But, in general, we rely on market pull more than technology push, because in many cases we do not need to engage with technological advancements to introduce new products. Knowing what our customers expect from us and what they want from us can sometimes help us to develop innovation without the need for new technology. We might just use existing knowledge and technology.
- C- Through customer feedback, where we expect important information about what creates value for our customers and products. In addition, this can help us in deciding whether to enter new markets or not. We also have regular brainstorming sessions, where employees in the departments involved in innovation, which are the HRM, Sales, R&D and Product development departments, meet in groups to share either solutions for current products under development or new ideas, knowledge and information.

Part C: HRM and Innovation

- 1- HRM is crucial for innovation. In essence, HRM can develop employees' skills, abilities and knowledge. I will put it this way; without HRM we cannot compete properly in the marketplace. We would be unable to develop new products or services or even understand how to achieve customers' needs or use the knowledge. HRM is what helps us to introduce successful innovation.
- A- I will recall here some of our HRM practices that we adopt, such as employee communication, job engagement, promotion, health and safety, recognition, email and internet, absence management, equal opportunities, performance appraisal, employee security, redundancy, motivation, recruitment, recognition and employee relations
- B- HRM practices provide us with a unique advantage. And we always try to use this advantage to achieve innovation. I can tell you generally about the importance of these practices. For example, motivation helps in increasing employees' loyalty and commitment, reduces the risk of leaving the

company and introduces new ideas. Health and safety is implemented to make employees more confident and comfortable at work. Job engagement increases levels of job involvement for employees and helps them to acquire higher levels of commitment and motivation. Absence management helps in reducing levels of absenteeism among employees and in this way we aim to encourage employees to introduce more ideas, increase involvement and reduce time taken to complete tasks. Recruitment is considered to be one of the main HRM practices that we adopt. It is our main resource for acquiring and retaining knowledgeable, skilled and talented employees who can introduce new ideas and develop the process of innovation. Employee development is adopted in order to help employees to develop the necessary skills at work and to provide them with important knowledge and information. HRM practices provide us with a unique advantage. And we always try to use this advantage to achieve innovation.

- C- Generally, experience has helped us identify which practices are important for innovation. But we revise from time to time the practices if they fit and achieve what we are looking for. However, of course, we also rely on customers' needs and feedback to identify more practices, the nature of an innovation project or a new product". We try to implement HRM practices that can be applied and achieve beneficial outcomes across different departments in the company.

Part D: Organisational Characteristics

- A- Our characteristics as an organisation are very important for us. Basically, they reflect and represent in certain ways who are we, what we do and how we do things. I think they are all related to each other. For example, organisational culture reflects how employees do things, which can be related to our performance and belief in the importance of innovation.
- B- Coupled with the HRM practices that we adopt and always try to develop, organisational characteristics also play an important role in achieving innovation. Performance is essential for the quality of our products, culture summarises employees' beliefs in innovation, creativity and assumptions of what creates value. Knowledge helps our employees in developing new ideas and reducing complexity. We also encourage our employees to exchange their knowledge and ideas with others. Structure represents for us the degree of freedom and flexibility in the organisation. We believe that a flexible structure, and giving employees a high degree of freedom at work, helps them to be more committed. Also, through this approach we aim to reduce the complexity associated with innovation.

Part E: HRM and Organisational characteristics

- A- I think that, to a great extent, both HRM and organisational characteristics are related to each other. HRM practices form the way that employees perform tasks; at the same time, our characteristics as an organisation also affect the way employees perceive what creates advantage and value. Which can be achieved through effective HRM practices that support their knowledge, skills, and abilities. Organisational knowledge, for instance, can be a very powerful tool in introducing new ideas; however, this can be supported by recruitment and other HRM practices such as employee development.
- B- Yes. I agree that some departments can respond differently to our characteristics. For example, I do not expect R&D departments to be responsive for organisational performance. Putting it simply, they already know that they have to develop an idea into a product or service. At the same time, Sales departments are expected to be more responsive for organisational performance, so they need to be more aware of customer feedback and customer needs.
- C- Well, I think this question is a bit tricky. As I said before, each is related to the other in some way. But to make it clearer, there is a general belief in the organisation in the role of HR and HRM practices – that they enable us to adapt to changes, adapt to new environments in the market, and speed up the innovation process. All in all, I would say HRM is more important, since it has a huge impact on employees' skills and ways of doing things. Without HRM, we lose the compass I think on what and how to create advantage, value and boost the performance

Part F: Summary

1- Barriers:

- A- Innovation: From time to time I think barriers for innovation are increasing. This is because of rapid competition and the need for more resources and knowledge. But generally, barriers can be things like lack of unique knowledge, unqualified employees, the challenge of making sure that employees are fully aware of what they need to do, lack of time, unspecified budget, and challenging characteristics of the project.
- B- HRM: The differences between employees in terms of abilities. Also, the nature of HRM practices needed for different tasks. We do revise the practices on a regular basis to assess whether they achieve the expected outcomes. Developing employees' skills and abilities as we think best to implement a bundle of practices to promote employees' skills and abilities.
- C- Organisational characteristics: I think mainly culture is crucial to our organisational characteristics. I strongly believe culture can help us to develop the rest of our organisational characteristics. It is almost impossible to acquire an organisational culture supportive of

innovation in the short term. This takes a long time to achieve. Regarding performance, I think the main challenge is about identifying customers' needs and satisfaction

2- Promoters:

- A- Innovation: I think our cooperation with external companies and parties help us in achieving innovation more efficiently. Also, experienced employees play a crucial role in reducing task complexity associated with innovation. The experience we have in the market gives us an advantage in introducing innovation and government support regarding tax and patents also supports our innovation processes.
- B- HRM: We know what each department can offer and which tasks it is responsible for performing. Also, we have support from the management for HRM and direct communication between employees and the management team.
- C- Organisational characteristics: Experience in managing the organisation, as we have the support of the main headquarters to adapt to new changes and support administrative decisions. Also, we hold annual sessions to revise our approach to performing tasks. Performance and structure are supported by HRM practices that can identify job characteristics and design as well as acquire more skills and knowledge

Interview 2

Part A: Q1) IMPORTANCE OF HR

HR is the source of knowledge and creativity. I mean, HR is considered in our company as a valuable asset. The processes we follow, the use of technology, problem solving and new ideas are all from our HR. It is our main source of competitive advantage

- A- We adopt a number of HRM practices rather than individual practices. The value-added form adopting a number of HRM practices differs when we implement a number of the practices. I think the benefits we get from applying individual practices is less than when applying a number of them
- B- We implement motivation, absence management, knowledge sharing and other practices
- C- Motivation and job engagement are recognised as the most important practices we adopt
- D- These practices can be reflected in developing employees' abilities and skills. We aim mainly to increase their engagement and development. All these practices aim to achieve higher commitment and involvement.

Part B: IMPORTANCE OF INNOVATION

- 1- Innovation is a condition of survival for our company. This industry, as we always say in our meetings or TV promotions, is based on innovation. Without innovation this industry would not exist. Customers' needs and the intense competition we face and always have faced can be survived through innovation.
- A- We rely more on external sources of innovation, which is open innovation, more than closed innovation. This helps us to reduce the time we spend and save some resources that are needed for innovation. Open innovation gives us insights into the latest technology and knowledge out there. Our managers always encourage employees to maintain good networks with other companies and colleagues.
- B- Our approach to innovation is based on the market approach. The market pull approach I refer to as the shortcut approach to innovation. By this, I mean that identifying market needs and what customers expect from us creates great opportunities for us to promote innovation. The technology push approach is helpful, but sometimes I think it is difficult to apply and can be tricky and misleading.
- C- As I said, HRM is considered vital in our company, so we rely massively on HRM to achieve innovation. Additionally, we do brainstorming sessions in our company to support employees' thinking and ideas for innovation. We also encourage knowledge sharing among employees. We also rely on customer feedback.

Part C: HRM and Innovation

- 1- HRM practices can enhance the process of innovation and the quality of innovation. I strongly believe that the success of innovation depends to a great extent on HRM. The time it takes to realise the need for innovation, the implementation of ideas, and understanding customer needs are all achieved through HRM. I would say there is no innovation without HRM. The minimum outcome of any effective HRM is enhanced performance and innovation. It's impossible to have HRM which is well defined without achieving innovation.
- A- We adopt a number of HRM practices to achieve innovation. I will mention the ones that we focus on and we discuss a lot in our meetings regarding HRM: motivation, recruitment, job engagement, employee development, recognition, employee relations, employee voice,

employee development, knowledge sharing, diversity, equal opportunities and absence management. We have been adopting these practices for a considerable period of time, and we see good and positive outcomes. We have been adopting these practices for a considerable period of time and we see good and positive outcomes.

- B- I will answer this question by telling you about the general benefit of all of these practices. We are looking for increased involvement, less turnover and higher levels of loyalty, motivation and skills. But as an example, knowledge sharing is beneficial for us as employees acquire new knowledge and share their knowledge, which can support innovation massively. We also allow direct communication between employees and management and we reward employees who introduce unique ideas or offer solutions to challenges. Employee development is important for us. This allows continuous development and awareness of the tasks. We always try to motivate employees by providing them with all the required tools and technologies to perform tasks. In return, when an employee achieves a certain objective we consider motivation by a package of rewards or incentives as a reward for him/her.
- C- There is no universal approach in our company that we follow to identify which practices we need to implement to promote innovation. Rather, we rely on our experience in adopting these practices, as well as our resources. The nature of innovation projects and customers' needs also plays a role in identifying which practices we adopt

Part D: Organisational characteristics

- A- Our organisational characteristics are unique. Our organisational knowledge represents the knowledge-sharing channels we have and support. This supports decision-making in relation to developing products as well as reducing the time it takes to perform tasks. Culture and performance are very crucial for achieving competitive advantage by understanding customers' needs and employees' beliefs in the importance of innovation.
- B- We rely on organisational characteristics in promoting innovation by different means. Knowledge, for example, helps in sharing knowledge and acquiring the knowledge necessary for innovation. In many cases, unique knowledge is shared with employees, which can support innovation and reduce complexity. Culture massively supports innovation, in that employees perceive innovation and its importance to competition. Performance represents our ability to achieve customer satisfaction and the quality of products, which can also enhance our financial profit as well. Organisational structure supports employees' activities and the nature of their tasks, whereby they are given freedom and self-administration at work

Part E: HRM and Organisational characteristics:

- A- Well, there is certainly a link between HRM and organisational characteristics. Let me explain it to you simply, for the organisation and specifically line management, the organisational characteristics that you mentioned, in terms of performance, structure, knowledge and culture, are based on what? They are based on our employees. In other words, we will not have a structure, however it is characterised, without employees to implement these strategies or improve their performance, or even our culture, which comes mainly from our HR. So, if we develop our HR to be more productive, motivated and skilled, we will eventually end up with characteristics for the organisation that can help us compete better. And in many cases we define our characteristics based on what we have in terms of HR and their abilities. Our HR creates who we are as an organisation, and therefore the organisational structure in some way reflects our HR. We need to manage our HR carefully and professionally through HRM practices. And that's what we are doing
- B- I think it's a matter of what is better for each department. For example, sales departments might consider organisational performance to collect customers' feedback and know what our customers expect from us. In general, organisational culture is important for all the departments where it creates a sense of awareness of and commitment to innovation, creativity or anything that can add value.
- C- When it comes to what creates value and promotes innovation, I think organisational characteristics and HRM are both important for innovation. If you ask me how I would rank their importance, I would refer to HRM as the most important for innovation since I believe HRM can influence our employees' performance, abilities and skills greatly. I mean, look at most of the organisations in the marketplace, they all have their own specific structure, knowledge, their culture, performance and unique approach to doing business. But the question is, are all of them successful? I do not think so. And I strongly believe this is because of their HR and the way they manage HR. HRM is a unique asset for each organisation; we train our employees to achieve specific tasks, and to acquire certain skills and enhance their abilities. The same for recruitment, we use a recruitment approach that is comprehensive and ensures that we recruit the best employees in the market.

Part F: Summary:

1- Barriers:

Innovation: Our main challenge for innovation is the financial issue. I do not mean that we are having problems financially, but when it comes to introducing new and innovative products, budget is the main concern that we are careful of. Our main challenge in this respect is that we do not know how many financial resources we need to maintain innovation – it depends on the project. Also, another challenge is competition in the marketplace.

A- HRM: Regarding HRM barriers I think the differences between employees' abilities and skills are the main challenge and barrier. Sometimes, we as a management team cannot minimise these differences. Simply, this is due to variation of skills across departments and employees involved in innovation.

B- Organisational characteristics: Although it is a result of our HR, the challenges that we face for organisational characteristics are somehow different from HRM. For instance, defining customers' needs sometimes is time-consuming and also requires more resources. Also, when we implement a specific organisational structure, some employees may feel uncomfortable or still need higher levels of autonomy, which can sometimes make them less motivated. Some of them come to my office to complain, and some of them take some days off when they do not like the changes. Getting employees to adapt to changes is our challenge for organisational characteristics.

2- Promoters:

A- Innovation: Experience in the marketplace is our main enabler for innovation. Innovation requires a lot of resources and entails complexity, but with our experience in introducing innovative products we feel more confident in introducing innovation. In addition, our HR and HRM are considered as fuel for the innovation process. Through our HRM and employees understanding their roles we can achieve a better flow for the innovation process.

B- HRM: We have annual meetings with employees to assess their understanding of HRM practices. In addition, any employee can suggest whatever he or she thinks to improve our HRM practices. I'm saying this to tell you that our management approach and our communication with our employees help us a lot in adopting HRM practices. Also, we can identify employees based on their abilities and skills, so in some cases we do not ask some employees to undertake many tasks or complex responsibilities until we are sure they are capable of doing so.

C- Organisational characteristics: Enablers for Organisational characteristics are placed within our employees and management. By saying this, I mean that our employees know what is expected from them in many cases and show high levels of cooperation with management decisions in most cases. Management also design the organisational structure and characteristics that suit our organisational nature and mix of employee skills. We also ask our employees for continuous feedback and suggestions about what can improve our organisation and the workplace.

Interview 3

Part A: Q1) IMPORTANCE OF HR

HR forms our unique advantage compared to our competitors. If you ask me to rank our resources and assets in the organisation, I would say HR is our most important asset. It plays a role in every single unit and action in our operations. That's why, no matter the competition in the market, having HR that is committed and qualified differentiates who we are as a company and the way we do things.

A- We would not survive and compete and be in this position in the marketplace if we were applying individual HRM practices. We do implement a collection and a bundle of HRM practices. We also consider the impact of different practices on others. For example, we try to implement employee development in some way in training and job engagement. That's to achieve higher beneficial outcomes of HRM practices

B- The practices that we adopt range from employee development, training, job engagement and absence management, to recruitment and motivation

C- Recruitment is considered our main interest and concern for HRM activities. Motivation, for example, can keep our employees committed and inspired to do more and enhance their performance. Job engagement also is considered to be important for us.

D- I think these practices are very important, among other important practices, as they offer a unique mix to our HRM practices. For example, recruitment can save us time, effort and resources if we carefully select employees who have knowledge, experience and skills. Job engagement is also important for us., we look to increase employees' involvement at work, their commitment, performance, motivation and abilities.

Part B: IMPORTANCE OF INNOVATION

1- Innovation is our success factor. I would also refer to innovation as our survival tool in the marketplace. Almost no one, especially in our industry, can compete nowadays without introducing innovative products or services. We cannot ignore the effects of globalisation or the markets' rapidly changing needs, or customers' expectations" and the reduced life cycle of

products. Innovation is an important source of profit in many instances. I believe innovation goes beyond profit; it gives us the opportunity to gain new customers and retain our customers.

- A- I believe in the role of wide networks and cooperation with others. It will be hard for us and time-consuming if we depend on closed innovation to develop our new products and services. In many cases, we will lose the advantage and the point of developing new products if we rely on closed innovation, as our competitors will have already introduced their own new products. So, we rely more on open innovation along with sometimes a closed innovation approach. Open innovation provides us with the chance to explore a wide range of new knowledge and ideas. Also, we save a considerable amount of time and effort when adopting open innovation. We have a greater exposure to others' experiences and knowledge.
- B- Both techniques or approaches are important for us. We tend, however, to adopt the market pull approach. This approach allows us to identify customers' needs which we offer in our products and services. As I said, we follow an open innovation approach, so, having said that, we fall more into a market pull approach category than technology push. If we rely on technology more, then we cannot meet customer needs in the market.
- C- The answer to this question is tricky. I'm not avoiding giving you an answer. I'm saying this because in this organisation we understand the complexity of innovation and the need to have a mix of resources, efforts and processes. But what makes all these resources usable and efficient, in my opinion I think is HR and any activities related to HRM. To use our resources, technology, knowledge and networks we need to have in the first place skilled and able employees to efficiently use these resources, introduce new ideas, convert ideas into new products and services, and acquire knowledge. Innovation also requires experience in the marketplace, what creates value, networks. We also hold brainstorming sessions in our organisation to support our employees to come up with new ideas. Our organisation also offers employees the chance to communicate with and reach management if they want to suggest any new idea or improvement at work.

Part C: HRM and Innovation

- A- HRM practices always play a vital role in creating innovation. Skills, knowledge, the abilities of employees, motivation, involvement and satisfaction at work and many other positive outcomes that HRM impose are vital for innovation. The nature of innovation activity and the process of innovation depend to a great extent on HRM practices. In many cases in this organisation we define and modify a number of practices in order to fulfil our innovation needs.
- A- Performance appraisals, recruitment, job engagement, absence management, grievances, employee relations, recognition, motivation and redundancy are the main practices we focus on in promoting innovation. I'm sure other practices are important and they add value. But, in our experience, we find that these practices are the most important for innovation.
- B- We aim by adopting these practices to increase levels of involvement, motivation, commitment and engagement. Recruitment provides the company with talented and skilled employees. And we always seek to recruit talented and skilled employees. In many cases, we place great importance on experience when we are about to recruit new employees. Appraisal gives us an indication of what we can really expect from our employees and what they offer; then we can know what our employees need to develop their skills and perform their tasks better. We also look for higher levels of job involvement through employee development and job engagement. Employees who are potentially more engaged than others are considered to take higher responsibilities and hold a leading position in their team or department. Through higher involvement, employees can become more focused and committed to their work and less likely to leave the company. We also believe in the importance of absence management where employees being less absent can contribute higher to activities and tasks in the organisation. Normally, we identify employees with lower absence and high engagement so that we then can engage them in complex tasks or missions, and of course we reward them in ways such as promotion, pay increases and other rewards.
- C- We identify HRM practices that are relevant to innovation, depending on our experience. Let me be clearer here, all the HRM practices, from my point of view, add value and contribute to the spirit of innovation in this organisation, either directly or indirectly. As we rely on open innovation customer pull or market pull, we identify HRM practices as those which can create more value to customers and allow our employees to be more open to other networks. The needs and objectives of upcoming projects or challenges also play a role in identifying what HRM practices we need to focus more on.

Part D: Organisational characteristics:

- A- Our organisational characteristics can massively improve what we do. Without clear targets and the definition of our performance, culture or structure, we cannot have our own identity. There is a clear, direct and indirect relationship between our characteristics and how we do things. Our performance and

belief in innovation, for example, depend on our understanding and our employees' understanding of what creates value and advantage.

- B- We understand that innovation is a complex process. We do look at and consider any factor or enabler that can support our approach to innovation. Along with HRM, organisational characteristics form an integral part of our philosophical mix and approach to innovation. To some extent, there is a relationship between our HR, HRM and organisational characteristics. Organisational characteristics in terms, for example, of culture can acquire a shared belief in the importance of innovation.

Part E: HRM and Organisational characteristics

- A- Definitely there is a relationship between HRM practices and organisational characteristics. I will give you an example that might help in getting a clear picture of how I see the relationship. If our organisational knowledge is very weak or unsupportive of innovation, we can address this by focusing on our HR. Human resources are what our organisational characteristics represent. We can focus on recruiting talented and knowledgeable employees, and we can conduct training sessions, encourage job engagement and deliver other HRM practices that can develop knowledge awareness and acquisition. Also, the skills and knowledge of our employees are affected by our HRM which, in the end, form our characteristics
- B- This is a shared thing across our organisation. I think this depends on the employees. For instance, some employees in HRM or R&D departments might be aware of the importance of innovation, while others are not. This creates a gap in understanding in our organisational culture. But generally, employees within Sales departments are more sensitive to performance issues, because they understand what creates value for customers and they understand their needs. For HRM employees, improved performance can take the form of becoming more skilled to deliver better and improved products. So, I would say it depends on the department how they contribute to our characteristics. In total, all are important for our characteristics.
- C- They both act as important factors for innovation I think HRM has a more direct impact on employees' performance and abilities. You can see the effect of HRM before organisational characteristics on performance and innovation.

Part F: Summary:

- 1- Barriers:
 - A- Innovation: Barriers to innovation are various. Given its complex nature and many activities involved in achieving innovation. Mainly, human resources can be a barrier in some cases, especially when they are not clear about what is expected from them or how to perform their tasks effectively. Money-wise issues can be a challenge for innovation.
 - B- HRM: Employee awareness and understanding of what they need to do is a challenge when implementing HRM practices. Time can be a barrier to developing specific HRM practices for some employees or teams, especially when we have to deliver a project in a given time
 - C- Organisational characteristics: Our main challenge is defining the suitable organisational characteristics for us and to achieve our objectives and achieve customer satisfaction
- 2- Promoters:
 - A- Innovation: Experience in the marketplace helps our organisation promote innovation. Also, knowledge sharing and acquisition channels, as well as the support we offer across the organisation, act as a positive enabler for innovation.
 - B- HRM: We focus on specific HRM practices that support our functions and activities. In addition, open channels with the management team are provided to all employees regardless of their job title, so this can help nurture better understanding and smoother implementation of HRM practices.
 - C- Organisational characteristics: I think this is related to both innovation and HRM. Our characteristics are supported by our HR, HRM and innovation capacity. Management support and annual assessments of our objectives and characteristics also help in adapting to changes or resolutions to our characteristics.

Appendix 5: Semi-Structured Interviews Guide (Employees)

Main Question	Items
Part A: Innovation	1- <i>How would you describe your contribution to innovation?</i> 2- <i>Would you describe your involvement in innovation as leaning more toward closed or open innovation? Market pull or technology push?</i> 3- <i>To what extent do you perceive your department to be engaged in innovation?</i>
Part B: HRM and Innovation	1- <i>To what extent do you perceive HRM practices to be of support and contribute to your awareness and commitment to innovation?</i> 2- <i>What practices of HRM do you perceive as valuable and relevant to promoting innovation?</i> 3- <i>What is the value of these practices to you?</i>
Part C: Organisational Climate and HRM	1- <i>How do you perceive organisational characteristics in terms of contributing to the innovation atmosphere in your department?</i> 2- <i>Please demonstrate whether the nature of the tasks you perform, related to innovation in your department, is supported more by HRM or organisational characteristics?</i>
Part F: Conclusion 3- Can you identify the barriers to	1 - <i>Innovation</i> 2 - <i>HRM</i> 3 - <i>Organisational Characteristics</i>
4- Can you identify the promoters (enablers) of	1 - <i>Innovation</i> 2 - <i>HRM</i> 3 - <i>Organisational Characteristics</i>

Appendix 6 Interviews Transcripts (Employees)

Interview 1

HRM 1

Innovation

- 1- My involvement in innovation can be described as being a promoter and supporter of activities that enable innovation. In this department I design, revise, redesign, modify and implement practices that are of great support and can promote innovation. I also in many cases suggest to my line manager that some practices might not be clear in their nature and purpose of design and implementation, in which case I recommend that these practices are explained to employees, in order to meet the real purpose of the designed practices.
- 2- Well, in this regard, I think this is the organisation's policy and orientation, not only me. I cannot go against the general desire and goals of the organisation. The orientation that I am involved in is more about open innovation with a market approach. The practices that my department develops and implements from time to time are in line with open innovation and the market approach. These practices support the use of external networks and allow employees to search externally for any potentially beneficial knowledge or resources from outsiders. I'm always being advised to check what the market and external sources are implementing or to follow and study the positive possible benefits for my organisation.
- 3- My department is, I think, very involved in and linked with innovation-related activities. A major part of my job is to identify what practices to adopt and to explain the nature of these practices to employees. I also suggest modifications to some practices when I realise that some employees might get confused or perhaps not meet the real purpose of the designed practices. All that, I believe, is a great support to innovation.

Part B

HRM and Innovation

- 1- The practices of HRM, of course, carry an extensive package of support for innovation activities. Employees, regardless of their department, are the source of knowledge and ideas, as they face challenges and are engaged in complex and constantly changing tasks. Here, HRM practices provide support directly and indirectly to employees. Skills, knowledge and being more enabled and capable increase motivation and commitment to work, all of which are directly influenced by HRM practices.
- 2- There are a number of practices; I will name some of them. These are like engagement, commitment, motivation, training, recruitment, performance appraisal, health and safety, absence management, grievances and employee development.
- 3- The real purpose of these practices is that in our department I believe that they enhance the levels of commitment and motivation at work. Also, these practices tend to recognise and reward the efforts employees put in at work. These practices are also aimed at me – I see their value in increasing my skills and ability to innovate and think differently, therefore broadening my scope of networks and connections within the organisation and across the industry.

Part C

Organisational characteristics/HRM

- 1- For organisational characteristics, their importance and relevance to innovation do exist, but indirectly from my point of view. The more direct impact is from HRM practices, as they can be changed and modified in a quicker manner than organisational characteristics. Organisational characteristics can be general for innovation, as they are not very specific or targeted to specific employees, whereas HRM practices or financial rewards and recognition are more recognised and effective for individuals here. I think that amongst the characteristics of the organisation, structure is the central one to innovation, as it allows employees to perform tasks flexibly and enjoy easy communication with their managers.
- 2- Organisational characteristics are, even if they are planned to be designed in a specific way, greatly affected by the individuals in the organisation. For example, the organisation, when seeking to promote an organisational culture that supports innovation, ensures that employees believe in the value of innovation and are oriented towards it, and here, individuals are very central to this issue. If they do not believe internally in the value of innovation and its importance, and the need to cope with the market's needs, then the organisational culture will not be that vital or influential. So, I think and from my experience in this department and in the organisation, it's more that HRM practices are capable of supporting innovation compared with organisational characteristics. We redefine, redesign and implement practices based on the needs of employees and raising any challenging or complex issues –

that's the power of HRM practices, which can then support and fix tasks and the progress of employees here.

Summary:

Promoters:

HRM:

I think we have experience in HRM practices and receive support from management, which can all be of value for HRM. The fact that we realise the differences between employees in terms of understanding HRM practices, and making sure they really get what the practices are designed for, is supportive of HRM.

Innovation:

The practices of HRM that we adopt are enablers for innovation, the dedicated teams and commitment by employees here and the belief in the value and importance of innovation.

Organisational characteristics

The realisation and understanding of the nature of tasks performed by employees allow characteristics to centre around their needs and the objectives of the organisation. Also, I think the realisation of job design to give employees more flexible structure and forms of work support the organisational structure.

Barriers:

HRM:

The main challenge to HRM is the difference between employees in understanding and perceiving certain HRM practices, because whilst some employees are able to see the value and importance of some practices, others fail to identify the relevance of these practices to their work. Also, in many cases, there is a misinterpretation of the real purpose between the implemented HRM practices and what employees expect from some practices.

Innovation:

Resources needed for innovation is a challenging issue. However, although experience helps us in introducing innovation, we still need to cope with rapid external changes, which is challenging.

Organisational characteristics

I think it's changing demands, technology and rising competition that make it really tough for organisational characteristics to cope with and adjust to the many changes this industry faces.

Interview 2

HRM 2

Part A

Innovation

- 1- A major part of my job is contributing to innovation. Practices designed to enable and promote innovation are at the heart of my work. I also get involved in understanding any innovation activity that the organisation tries to introduce, so I can then suggest some practices that support the nature of the project that is taking place.
- 2- Open innovation is more advantageous for us than closed innovation. Being open to external sources of knowledge and resources definitely brings more benefits and value-added resources and assets to us. This also makes the implantation and design of some HRM practices more effective, as they can be implemented with less complexity and better understanding when linked to and supported by external knowledge and resources. And in regards to market and technology approaches, we follow both, but we tend more toward the market pull approach. The value of this approach is that we can identify customer and market demands, so we can then identify what changes to introduce and implement HRM practices that can support new changes in products or services.
- 3- This question was answered by my previous answers and comments. However, I will confirm again that my department contributes hugely to innovation, as I perceive it. Providing individuals with unique and organisation-specific sets of capabilities helps not only to introduce innovation, but also to perform their daily activities more professionally and effectively.

Part B

HRM and Innovation

- 1- Without supportive HRM practices, my contribution to innovation and even understanding what creates value for innovation would be very shallow. The practices we adopt increase the levels of commitment and motivation towards innovation by making employees more skilled, ready to accept and adapt to changes and motivated to perform better.
- 2- Yes, alright, the practices I perceive as valuable and which promote an innovative spirit are training, job design, performance appraisal, recruitment, engagement, motivation, development and absence management. There are other practices, but for me I think these practices are more valuable and relevant to innovation.
- 3- These practices are designed to develop the willingness to innovate and adapt to changes, as the industry we are operating in sees constant change. So these practices tend to develop employees' skills, motivation, knowledge sharing and commitment at work.

Part C

Organisational characteristics/HRM

- 1- I think organisational characteristics here create a friendly environment to innovate and to be motivated. The mixture of performance, studying market needs, sharing knowledge and the existence of knowledge-sharing panels, in addition to the flexible structure in the organisation, all help to support and promote innovation.
- 2- The tasks that I am engaged in and perform are promoted and supported more by HRM practices. There is a more direct impact of HRM practices on my tasks than organisational characteristics. Even though organisational characteristics are there and do have an impact, when a modification is needed, HRM practices are more able to do so, and some practices can be designed to meet some employees' needs when they face a challenge.

Summary:

Promoters:

HRM:

Support from management in implementing and understanding the fact that employees differ in their understanding of some practices.

Innovation:

Experience, experience and experience. That's what is important for innovation and helps us promote it. Experience in introducing incremental or radical modifications and identifying what resources we need, as well as HRM practices. The use of an open approach is also very useful in innovation.

Organisational characteristics

For this, the design of jobs here and the flexible nature of the way in which we are encouraged to perform tasks enable the characteristics and especially the structure and knowledge to support us more.

Barriers:

HRM:

Different tasks and the different nature of these tasks make it tricky to design and implement some practices. From my experience, I also think that the gap between employees and the real purpose of the practices designed and framed by management make it challenging for HRM practices.

Innovation:

Rapid changes in the marketplace and the different resources needed for innovation.

Organisational characteristics:

The nature of the tasks performed and the changes associated with them challenge the re-modification of organisational characteristics.

Interview 1

R&D

Part A

Innovation

- 1- My job is to innovate. My tasks are designed to innovate. The way I contribute to innovation is considered to be one of the major contributions. In my organisation, R&D is the heart of any changes or renewal of the organisation and the things we offer to customers.
- 2- I perform tasks that rely on an open innovation approach. The value of this approach is that it facilitates the innovation process and helps us acquire extra resources that are beyond our hands and abilities. In some cases, when I request assets or knowledge that the organisation does not have or cannot acquire, we use the open innovation approach to do so. Between market and technology methods, for me as an innovation employee, the market pull has many positive sides; it helps save time, and in some way it allows us to be first mover in the market, identify and meet customers' needs and understand what kinds of resources are also needed to introduce new products or changes. The technology approach requires extensive investment in time and resources, as a result of this rapidly and constantly changing marketplace, that will not be very beneficial for us. In many cases, if we need the technology support approach, we look to rely on open resources and networks to do so.
- 3- Innovation is my department's target. So, there is nothing more important for us than to innovate and provide solutions to the challenges and issues employees face while performing their tasks. Nowadays, innovation requires collaborative effort and coordination from different departments. For us, we gather all the information and effort to translate ideas into actual useful products or services. This transformation and the implementation of ideas are the core job requirements of my department.

Part B

HRM and Innovation

- 1- HRM practices are a source of innovation specific to innovation. The ability and willingness to innovate is greatly linked to HRM practices. HRM practices support my activities and the use of existing resources and knowledge. The challenges I face in my job are many, and so HRM practices in this regard can reduce this complexity and the challenges I face. There is constant communication and support from the HRM department with my colleagues and me, in order to support our abilities while performing tasks.
- 2- In line with the nature of the tasks I perform, the practices that are relevant to me are training, job engagement, employee development, employee relations, consideration and respect, sharing of information and knowledge, motivation, rewards and communication.
- 3- These practices enable me to be more engaged with innovation activities, and they provide me with the support needed to achieve the goals I am required to fulfil. Motivation and rewards for me are really important to keeping me more engaged and involved in the work I do, and they give me the incentive to do more.

Part C

Organisational characteristics/HRM

- 1- For me, what is most effective in relation to organisational characteristics is structure. The level of freedom I am given is important for me, as my job involves changeable processes and iterations, so having a suitable degree of autonomy at work is really important and it keeps me motivated and more engaged.
- 2- It's the HRM practices that I feel and perceive to be more relevant to and supportive of my tasks. Organisational characteristics are more beneficial for long-term policy and orientation. In my job, I face many changes that require support from HRM practices.

Summary:

Promoter:

HRM:

Communication with management is really important for HRM practices. Their understanding of our needs and that our tasks have some levels of complexity make the process of developing HRM practices more effective.

Innovation:

The experience we get from being involved in innovation for some period of time helps us in approaching and promoting innovation. The coordination between different departments facilitates the innovation process.

Organisational characteristics

The designs of jobs in my organisation allow the implementation and effectiveness of organisational characteristics to be more beneficial.

Barriers:

HRM:

Sometimes, some practices are not very relevant to me, and I feel that I understand and realise their value and objectives, but they seem to be different. I expect some practices to promote some aspects of work-related behaviours, but in reality I have found that the purpose was different, either somewhat in some cases or considerably in others.

Innovation:

The complexity of innovation and level of detail, knowledge and skills required for some processes while implementing and transforming some ideas is challenging. The time factor is also important and can be challenging, especially when we aim to be the first mover in the market.

Organisational characteristics

I think the outside environment can be challenging when looking to develop organisational characteristics, as the environment is subject to constant changes.

Interview 2

R&D

Part A

Innovation

- 1- Innovation is a great part of my job here. I contribute to innovation in many different ways, but what is essential about it is the transformation and implementation of creative ideas into actual end products or services.
- 2- It's open innovation, in order to get more resources and knowledge that are really vital for innovation. Along with that, we adopt the market pull approach to meet customers' needs and understand what sort of changes we need to add or alter.
- 3- My department, from my perspective, is greatly responsible for supporting and introducing innovation. We identify the nature and the target of innovative products, by which I mean are look for innovation that is focused internally, such as packaging and processing, or more externally, such as changes that are obvious and clear to customers. These can include inserting new changes into the design in addition to the characteristics of new products, or we may look for a major degree of change or small incremental changes and so on.

Part B

HRM and Innovation

- 1- I rely a lot on HRM practices to enable me to contribute to innovation. These practices can support different sets of individual characteristics such as motivation, rewards, skills and providing training, when required.
- 2- Well, for me, these can be training, motivation, engagement, health and safety, employee communication, information sharing, discipline and training.
- 3- The value of these practices for me is that they keep me motivated and feel that I receive fair treatment and the organisation recognises my efforts. They also enhance my skills and ability to innovate.

Part C

Organisational characteristics/HRM

- 1- Organisational characteristics are supportive of the general capability and appetite for the organisation in the market to absorb signals by competitors and customers. This is important, as the organisational settings will be more in the context of supporting innovation and allowing innovation to happen. This means that our organisation is committed to innovation, being different and believes in its employees, which I certainly feel.
- 2- Organisational characteristics are very specific to the identity of the organisation, oriented towards the market, what beliefs and assumptions we hold and so on. These are consisted from us; however, when it comes to performing tasks, I think that arrangements and assets that are specific to individuals, such as HRM practices, have more benefits for employees in the organisation. Different HRM practices can be implemented in a flexible manner and time, but for organisational characteristics I don't think that this can be done – they need more time. So, for me, it's HRM practices.

Summary:

Promoters:

HRM:

I consider open communication with management and constant support by the HRM department as a big promoter of HRM.

Innovation:

It's difficult to innovate if you have no experience and have been in the market for a considerable time. For us, experience helps us a lot in introducing innovation.

Organisational characteristics

Predicting and accepting changes, for me, is what supports our organisational characteristics.

Barriers:

HRM:

Understanding some HRM practices can be challenging, and I expect from some practices to promote features that are different from the real purpose.

Innovation:

The time we need, and I think this is expected and normal, to introduce innovation is challenging. Also, when we acquire some knowledge or resources from outside, it can be challenging to understand how to implement them and make the best use of them.

Organisational characteristics

I think the challenge for organisational characteristics is the time needed to identify what to change and how to change it. It's not easy to change the orientation of some characteristics in the organisation, I think, and management are more expert in this regards, which is why it needs really careful consideration of where the organisation wants to be in the future.

Interview 1

Sales 1

Innovation

- 1- This question is really broad and difficult to give you all the possible contributions to innovation that I offer. This is because innovation is a complex activity; therefore, the nature of the contribution and the way I offer it depends on the activity itself. However, I believe that we as employees are the cornerstone of innovation activities. My colleagues and I offer ideas, solutions and modifications to existing products or services. For me, their commitment to innovation and understanding its importance is one of the major contributions to innovation, because this is a trigger to what's next, what changes to make and what to offer uniquely.
- 2- I am involved in activities and tasks that require open communication and exposure to external sources of knowledge and networks, so I belong to the open innovation approach, which I think most of us in this department tend to adopt. However, this does not mean that we do not follow closed innovation; we do so, but on very limited occasions. We also follow the market pull approach here in our department. As I work in the sales department, we are directly in contact with customers and provide recommendations to our management about market needs – it's less complex than the technology-led approach. Open innovation and market pull approaches are of great support to us when introducing radical innovations.
- 3- I think, to a great extent, that my department is widely involved in innovation activities. The approach we follow helps in obtaining really important information and the status of the market and its needs. This can then be translated into actual modifications in products or services, or we might introduce totally new products and services.

HRM & Innovation

1-HRM practices are very central in my activities. The way I perform tasks, the ways I perceive a challenge and understand and contribute to organisational goals and objectives are shaped and sculpted in many ways by HRM practices. For example, engagement allows me to be more committed to innovation by being more involved, enjoying my work and adapting to changes. I see a direct and indirect impact of HRM practices on my contribution to innovation. Direct can be through gearing my efforts and guiding me on what and how I have to do something, and indirect by allowing me to use the knowledge and resources we have more effectively and feel always that I have to be ready to accept changes and adapt to them.

2-There are many practices that I perceive as beneficial and important for innovation, such as training, engagement, motivation, training, rewards, health and safety, appraisal of my performance, job design, employee security, retention and development.

3-These practices, I feel, make me more motivated and involved in innovation. As an employee, it makes a difference to me that I can understand these practices' benefits and apply them throughout my activities. It's things that I look for, such as skills through training, being closer to the nature of work I do, making me more confident to perform tasks that are linked with engagement and development.

Organisational characteristics/HRM

- 1- The characteristics that our organisation has, of course, make an impact on innovation and the way we perform our tasks. The general orientation and beliefs in the organisation are shaped by its characteristics. From my position, I feel that organisational performance and structure more directly influence the ways I perceive and perform things. Performance affects my work in terms of what qualities customers are looking for. The structure offers a high degree of flexibility and autonomy, so we can communicate with and reach out to management very often and I can perform many tasks without having to get back to my line manager. I have been here for a while, and I can tell you I have been asked many times to provide feedback on the settings and arrangements that the organisation follows, which I feel might have impact on my work.
- 2- It's a mixture, to be honest. There is no one and only factor that supports innovation. But, in terms of which ones support innovation more, for me, its HRM practices, because HRM practices can be modified, implemented and are more effective at any time while we perform a task or are engaged in a project. Given the complexity of innovation, I think I need more adaptive and adjustable on demand, shall I say, practices, or even practices that enhance my existing skills. For organisational characteristics, that is not the case. For me, I think they are for the long term and not when I am engaged in innovation or another activity. However, even though they might be engaged already, HRM practices can fuel innovation more directly and effectively, at least that's me and I think that's the same for my department.

Summary

Promoters:

HRM:

I think, for HRM, it's understanding the nature of the practices is a big supporter or promoter of the HRM. Also, it's the management communication and support I get in regards to the nature of practices, or if I need a specific practice to be explained more and implemented. I can discuss with my line manager issues regarding how I can benefit from a certain practice or identify what practice might improve my ability to do a task.

Innovation:

For me, it's the experience in innovation and understating customers' needs. I think being open to the external environment, as well as following a market-led strategy to innovation, helps me a lot in contributing to innovation.

Org Characteristics:

I think the variety and diversity of employees in my department play a great part in supporting organisational characteristics. Many of my colleagues and I are willing to accept –and expect – change from time to time, which I feel the structure of the organisation helps in accepting and adapting to change.

Barriers:

HRM:

In some cases, I feel some practices are really vague and unclear, and so in this instance I seek my manager, to help me understand these practices better. But it can also still be less clear to me when implementing these practices, saying the practice is a thing, but implementation is the major thing and totally different in many cases.

Innovation:

The time I need to contribute to innovation and the processes involved in innovation can be time consuming, and I sometimes lack specific knowledge regarding a certain issue, which can be challenging.

Org Characteristics:

I think this question is better answered by managers, as they will be able to give a better picture, but I can tell you that the challenges and changes I see at work, and the dynamics of the market, make it challenging to modify the characteristics necessary to support my activities.

Interview 2

Sales 2

Innovation:

- 1- My contribution to innovation is linked directly to getting information about customers and market needs and demands. I read what our customers need and try always to match their needs by offering suggestions to my department, so I can then provide guidance in line with what customers are looking for. I also give feedback on what customers think about the products we offer.
- 2- As mentioned, I read and see what the markets and customers are looking for, so by nature and default my involvement in innovation is driven by the market pull approach. I also, as encouraged by management, try to be open to external sources of information and knowledge. Being closed these days, I think, does not help my department or me in our activities. I feel I can provide unique knowledge and contributions by following open links and windows to support innovation.
- 3- The department I'm working in is very involved in innovation. I always see my department as a feeder for the organisation on what form of innovation should be introduced, or even how new a new product or service is in reality. More importantly, we also deliver new products and services to the market. Therefore, I am part of a team that is really in direct contact and engages with innovative activities.

HRM & Innovation

- 1- For me, innovation is linked with HRM and its practices. In many cases I adopt a practice after requesting it from my manager to help me support innovation. HRM practices help me in getting what I

- have inside me to offer to innovation and push me to contribute to innovation by considering various solutions, indulging in creative thinking and enhancing my performance.
- 2- I can think of practices that I really feel make me more engaged and motivated to innovate and offer solutions, such as motivation, grievances, engagement, job design, communication, training, and health and safety.
 - 3- I perceive these practices, as I mentioned, as being able to motivate me to be more capable of facing challenges and being more creative. There is also a shared value of these practices, by which I mean the bundle of practices that I am subjected to, in total they all add up and have an impact on my commitment to innovation and to my organisation. I feel I have no excuse not to be engaged in innovation.

Organisational characteristics/HRM

- 1- As an individual in this organisation, and this department specifically, I perceive organisational characteristics to have created a healthy and encouraging environment. As a sales team member, performance and knowledge are really central to me. Organisational performance and communication place help greatly in understanding customers' needs and demands. Organisational knowledge also, in line with sharing information, creates a space for me to acquire the information I need to process my tasks.
- 2- The fact that I deal with changing customers' demands and unpredictable product lifecycles makes me rely on HRM practices more. These practices can be applied depending on the nature of the tasks and challenges. I can always look for other practices or ask my manager to help develop a specific ability or skill to perform a task. HRM practices are linked more with innovation than organisational characteristics; however, the characteristic of the organisation are also valuable. Speaking of a more profound impact on innovation, I would say HRM practices. I feel this as an employee entitled to do different tasks, not only innovation, so I can see what is more supportive in my case.

Summary:

Promoters:

HRM:

The fact that I deal with many tasks that require different practices, and I imagine many of my teammates are the same, makes the adoption of HRM practices more understandable and valuable. I also ask my manager if I don't understand the nature of some practices. Management support is also important in this regard.

Innovation:

I think the experience I have, and that of other employees, makes us familiar with innovation and what to expect in many scenarios. I also consider that I'm engaged in open approaches to innovation and in contact with customers to help support innovation.

Org Characteristics:

Understanding the value and need to be different in the marketplace, I believe, is a big promoter of organisational characteristics. For me, being in the sales department, what I find to be supportive is the structure of the organisation, which allows me to be more flexible in my job and I don't need authorisation for each activity I do.

Barriers:

HRM:

There is a challenge regarding HRM practices, namely the nature of the tasks and their changing nature, which makes the ability to adopt different HRM practices to support these changes kind of challenging. I sometimes find it difficult or it takes me time to understand the nature and aim of some practices.

Innovation:

Sometimes, I'm concerned about the participation of other members in my department in relation to how they can support innovation and if we are on the same page while performing a specific task. There are always challenges in innovation, as it's a complex activity.

Org Characteristics:

It's the completion and challenges outside the organisation, I believe, that present barriers to organisational characteristics. The changes outside are so rapid, and I think the organisation needs time to adjust to these. In

regards to organisational characteristics, this needs time, but again, more challenges and rivals surface in the marketplace.

Interview 1

Product Development:

Part A

Innovation

- 1- Well, my contribution to innovation is based on the nature of the new products or services we have to offer. By this, I mean to say that in my department we work in coordination with the R&D department; actually, we have a joint team in many cases, to modify and identify the way we should introduce new products and services. This helps in the renewal process for the organisation.
- 2- I am involved in and I recommend ways to my line manager to follow open approaches. From my experience, innovation requires a lot of resources and time, but accessing external resources and networks eases this process, saves us time and reduces the complexity of innovation. We complement our competences through open innovation. For the market approach, I think it's more effective and suitable in the current changing markets, as customers always demand changes and new products, so we have to meet their expectations and exceed these expectations as well.
- 3- As I mentioned, the department I work in works jointly and closely with the R&D department to produce both minor and major changes. So, my department is dynamically involved in innovation.

Part B

HRM and Innovation

- 1- I always rely on HRM practices and the support I obtain from them. The skills I acquire from HRM practices, the way I perform tasks and how to perform specific complex tasks are supported massively by HRM. Without contentious support from HRM practices, I wouldn't be engaged and involved in innovation activities. Especially in working with other departments such as R&D, HRM practices provide me with great support in relation to communication, engagement and relations.
- 2- There are a lot, such as engagement, training, relations, design of jobs, development and appraisals.
- 3- They help in working more effectively with other departments, and making me more engaged and motivated to perform my tasks, all of which is important to me in performing my tasks and being more creative and confident.

Part C

Organisational characteristics/HRM

- 1- The characteristics of the organisation fall more in line with our management strategy and vision. They do support the innovation atmosphere here by having a flexible working routine, open communication lines and a shared belief amongst my colleagues of what can potentially create value for the organisation and be of benefit for all. We are always encouraged to use knowledge channels and share whenever needed with others, which already is supported as well by open innovation. These are all guided and promoted by our management.
- 2- To a great extent, I believe and perceive that HRM practices are more crucial to the nature of the tasks I do. With any challenges we face here, HRM practices support our ability to work under pressure and complete complex tasks. They also can be targeted and designed to promote specific sets of skills or individual abilities, which I think is very necessary for innovation, while organisational characteristics are more for the general atmosphere, the organisation as a whole.

Summary

Promoters:

HRM:

I think that employees' willingness to understand HRM practices, and their understanding of the value of these practices and what they can offer to enhance their performance, creates important support for HRM practices.

Innovation:

The experience we have here, as well as coordinating efforts regarding innovation with other departments, promotes our ability to introduce innovation.

Org Characteristics:

Management believe in promoting a successful environment to host creative activities. Alongside the diversity of employees, I believe this helps in shaping our characteristics in a more beneficial way.

Barriers:

HRM:

Sometimes, I have difficulty understanding why this practice, and its value, is relevant to my work.

Innovation:

The complexity of innovation always creates room for challenges. For instance, the time it takes to filter and process knowledge and ideas and transform them into products or services is a real challenge, as we have competitors, so making the first move is essential. Also, sometimes, when financial resources and budgets cannot be defined, costs increase and we need to revisit the design or approach to that new product or idea. Again, this all adds to the time factor.

Org Characteristics:

The challenge here, I think, is that we need more management support to design characteristics that support the vision and mission of the organisation but at the same time take into account employees and their differences in terms of understanding the purpose and expected outcomes of some of these features.

Appendix 7- Descriptives of Scales

1- Training

Q. No	Training	SD	D	N	A	SA	Mean	Std D
Q1	Training strives to develop the company's specific skills/knowledge.	4.7	6.2	14	36.4	38.8	3.98	1.09
Q28	I know what training, learning, knowledge and information I need to engage in to support performing tasks.	0	0	17.8	68.2	14	3.96	0.56
Q34	Training is continuous in this company.	0	0	12.4	66.7	20.9	4.08	0.57
Q46	I receive training to increase short-term productivity.	0	0	0	78.3	21.7	4.21	0.41

2- Recruitment

Q. No	Recruitment	SD	D	N	A	SA	Mean	Std D
Q3	The recruitment process in this company is comprehensive (interview, tests, etc.).	2.3	5.4	27.9	39.5	24.8	3.79	0.95
Q98	Recruitment involves screening job candidates through many stages before offering them the job.	0	14.7	14.7	55.8	14.7	3.70	0.89
Q11	Recruitment in this company focuses on selecting the best, who contribute to the company's strategic objectives.	7.8	7	21.7	45	18.6	3.59	1.10
Q45	Recruitment places a priority on candidates' skills, knowledge, and experience.	0	3.1	24	45.7	27.1	3.96	0.79

3- Performance Appraisal

Q. No	Appraisal	SD	D	N	A	SA	Mean	Std D
Q33	Appraisal measures productivity and efficiency.	0	3.1	18.6	55.8	22.5	3.97	0.73
Q44	Appraisal is based on quality of output.	1.6	7	8.5	64.3	18.6	3.91	0.82
Q70	Appraisal is based on objective and quantifiable results.	3.1	13.2	24.8	45	14	3.53	0.99
Q96	Appraisal is based on input	0	10.9	27.1	45.7	16.3	3.67	0.87

	<i>that employees provide.</i>							
--	--------------------------------	--	--	--	--	--	--	--

4- Compensation and Rewards

Q. No	Compensation and Rewards	SD	D	N	A	SA	Mean	Std D
Q69	Rewards and compensation in this company are provided to focus on and achieve short-term performance.	4.7	10.1	37.2	36.4	11.6	3.40	0.98
Q99	Rewards and compensation are provided based on industry experience.	5.4	6.2	39.5	43.4	5.4	3.37	0.89
Q123	Rewards and compensation are used to provide incentives for new ideas.	3.1	13.2	32.6	33.3	17.8	3.49	1.03
Q32	Rewards do not include an extensive benefits package. (R)	14	22.5	27.9	19.4	16.3	3.01	1.28

5- Employee Development

Q. No	Employee Development	SD	D	N	A	SA	Mean	Std D
Q31	In this company, we engage with complex tasks.	0	0	41.1	49.6	9.3	3.68	0.63
Q12	This company offers self-development and skills development sessions and courses.	3.1	6.2	30.2	38	22.5	3.70	0.98
Q100	In this company, we perform tasks that require participation in teams and networks.	3.9	9.3	20.9	46.5	19.4	3.68	1.01

6- Scale: Job Design

Q. No	Job Design	SD	D	N	A	SA	Mean	Std D
Q85	I perform tasks that are designed around my skills.	1.6	4.7	30.2	46.5	17.1	3.72	0.85
Q124	I can perform my job with a high degree of autonomy.	1.6	11.6	39.5	33.3	14	3.46	0.92
Q101	I perform a job that includes a wide variety of tasks.	3.1	10.9	25.6	41.9	18.6	3.62	1.00
Q30	I perform tasks that allow me to make decisions.	1.6	10.1	17.1	53.5	17.8	3.75	0.91

7- Employee Communication

Q. No	Employee Communication	SD	D	N	A	SA	Mean	Std D
Q102	<i>I cannot discuss any matters with my boss. (R)</i>	1.6	24	24.8	22.5	27.1	3.49	1.17
Q29	<i>When I face challenges I can communicate with my supervisor.</i>	0	0	17.1	59.7	23.3	4.06	0.63
Q21	<i>If I have any concerns or recommendations about my job I cannot raise them with my boss or supervisor. (R)</i>	6.2	22.5	20.2	34.1	17.1	3.33	1.18

8- Absence Management

Q. No	Absence Management	SD	D	N	A	SA	Mean	Std D
Q125	<i>My job is straightforward and not very stressful.</i>	6.2	15.5	55.8	17.1	5.4	3.55	1.08
Q126	<i>My job does not give me the chance to complete tasks that I have already started. (R)</i>	3.1	20.2	45	21.7	10.1	3.61	0.97
Q2	<i>I enjoy working for my company.</i>	2.3	5.4	11.6	51.2	29.5	3.65	0.96

9- Talent Management

Q. No	Talent Management	SD	D	N	A	SA	Mean	Std D
Q13	<i>My job does not allow me to gain more skills. (R)</i>	3.1	14	31	28.7	23.3	3.55	1.08
Q117	<i>This company does not recognise talented and creative employees for future development. (R)</i>	2.3	11.6	25.6	43.4	17.1	3.61	0.97
Q43	<i>My department is usually benchmarked with others.</i>	3.9	7	24.8	48.1	16.3	3.65	0.96

10- Retention Management

Q. No	Retention Management	SD	D	N	A	SA	Mean	Std D
Q118	<i>I have good relations with my colleagues.</i>	0	9.3	17.8	43.4	29.5	3.93	0.92
Q71	<i>I get paid enough in this company.</i>	10.1	22.5	26.4	31	10.1	3.08	1.15
Q72	<i>I like to work here.</i>	1.6	13.2	26.4	34.9	24	3.66	1.03
Q119	<i>The working conditions in this company are good.</i>	3.9	5.4	24	41.1	25.6	3.79	1.01

11- Work–life Balance

Q. No	Work–life Balance	SD	D	N	A	SA	Mean	Std D
Q103	<i>Working hours are not a criterion in assessing performance.</i>	4.7	24.8	43.4	18.6	8.5	3.01	0.98
Q104	<i>I have received guidelines concerning flexible working such as working at home.</i>	7	15.5	34.1	31.8	11.6	3.25	1.07
Q127	<i>When I ask for leave to do something outside work it is approved and understood by my boss.</i>	3.9	10.9	24.8	26.4	34.1	3.75	1.15

12- Job Engagement

Q. No	Job Engagement	SD	D	N	A	SA	Mean	Std D
Q89	<i>My job is interesting.</i>	1.6	9.3	37.2	36.4	15.5	3.55	0.91
Q90	<i>I'm not given freedom to decide how to do my work. (R)</i>	2.3	26.4	30.2	26.4	14.7	3.24	1.07
Q91	<i>I get on well with my work colleagues.</i>	1.6	5.4	23.3	52.7	17.1	3.78	0.84
Q92	<i>I'm very satisfied with the work I do.</i>	0	7.8	26.4	48.1	17.8	3.75	0.83

13- Recognition

Q. No	Recognition	SD	D	N	A	SA	Mean	Std D
Q93	<i>My contribution is adequately recognised by my boss.</i>	1.6	14.7	24	40.3	19.4	3.61	1.01
Q94	<i>I get paid extra when I perform well.</i>	5.4	18.6	46.5	25.6	3.9	3.03	0.90
Q128	<i>Grading decisions are made fairly.</i>	20.2	14	20.9	31	14	3.04	1.35
Q73	<i>I receive good feedback on my performance.</i>	3.1	4.7	27.9	44.2	20.2	3.73	0.93

14- Health and Safety

Q. No	Health and Safety	SD	D	N	A	SA	Mean	Std D
Q113	<i>I have been introduced to and provided with health and safety procedures at work.</i>	0	12.4	26.4	43.4	17.8	3.66	0.91
Q22	<i>In my company, safety comes first.</i>	4.7	5.4	19.4	41.1	29.5	3.85	1.05
Q23	<i>There is a compensation policy to follow if any loss or damage happens to any individual.</i>	1.6	4.7	23.3	38.8	31.8	3.94	0.93
Q64	<i>I do not follow health and safety procedures when I perform tasks. (R)</i>	6.2	27.1	24.8	16.3	25.6	3.27	1.28

15- New Technology

Q. No	New Technology	SD	D	N	A	SA	Mean	Std D
Q95	<i>If adoption of new technology will lead to redundancies, this is explained before changes are made.</i>	4.7	10.9	48.1	33.3	3.1	3.19	0.84
Q96	<i>In this company, regular sessions are held on the use of new technology.</i>	2.3	16.3	32.6	38	10.9	3.38	0.96
Q120	<i>Employees will be consulted before new technology is introduced.</i>	7.8	16.3	35.7	31	9.3	3.17	1.06

16- Redundancy

Q. No	Redundancy	SD	D	N	A	SA	Mean	Std D
Q10	<i>Supernumerary employees are given fair and equitable treatment.</i>	4.7	18.6	35.7	27.9	13.2	3.26	1.05

Q65	<i>There is minimal disruption to employees when someone has to leave the company.</i>	10.9	7.8	34.1	31	16.3	3.34	1.16
Q66	<i>There is annual evaluation of the nature of the tasks that I perform.</i>	0	16.3	25.6	31.8	26.4	3.68	1.03

17- Diversity Management

Q. No	Diversity Management	SD	D	N	A	SA	Mean	Std D
Q67	<i>Diversity is a company policy, with the opportunity for all employees to get recognition and rewards.</i>	7	10.9	33.3	30.2	18.6	3.42	1.12
Q14	<i>Individual differences are noticed and recognised in this company more than group differences.</i>	2.3	18.6	41.1	33.3	4.7	3.19	0.87
Q41	<i>Differences among employees in this company are treated appropriately by management.</i>	0	9.3	30.2	43.4	17.1	3.68	0.86

18- Email and Internet

Q. No	Email and Internet	SD	D	N	A	SA	Mean	Std D
Q74	<i>I use the Internet and email in order to find the information I need.</i>	3.1	7.8	17.1	41.9	30.2	3.88	1.02
Q24	<i>I'm encouraged to use the Internet and email to exchange ideas.</i>	0	3.9	24	41.1	31	3.99	0.84
Q105	<i>We are not allowed to browse the Internet or download any material that is not related to work.</i>	19.4	24.8	20.9	32.6	2.3	2.73	1.17

19- Grievances

Q. No	Grievances	SD	D	N	A	SA	Mean	Std D
Q4	<i>If I have any kind of grievance I can discuss it with my supervisor.</i>	1.6	13.2	21.7	36.4	27.1	3.74	1.04
Q121	<i>I have the right to appeal to a more senior manager against a decision made by an intermediate manager.</i>	3.9	14.7	33.3	31.8	16.3	3.41	1.05
Q15	<i>I can be accompanied by a colleague when appealing or raising a grievance.</i>	9.3	9.3	48.8	29.5	3.1	3.07	0.94

20- Employee Voice

Q. No	Employee Voice	SD	D	N	A	SA	Mean	Std D
Q75	<i>Our needs are not considered and heard by line managers. (R)</i>	12.4	27.1	19.4	24.8	16.3	3.05	1.29
Q76	<i>When I face a difficult or complex task, I discuss it with my manager.</i>	3.9	11.6	27.1	39.5	17.8	3.55	1.03
Q68	<i>We have regular meetings with top management to discuss our needs and interests.</i>	5.4	11.6	27.1	43.4	12.4	3.45	1.03
Q77	<i>When we introduce and implement new ideas and concepts, the company does not offer support. (R)</i>	7	20.9	23.3	27.9	20.9	3.34	1.22

21- Equal Opportunity

Q. No	Equal Opportunity	SD	D	N	A	SA	Mean	Std D
Q114	<i>There are many employees in this company with different backgrounds.</i>	0	10.1	14	55	20.9	3.86	0.86
Q115	<i>Development, promotion, payment and training are available to all.</i>	7	12.4	27.9	34.1	18.6	3.44	1.13
Q25	<i>Indirect discrimination takes place when, whether intentionally or not, a condition is applied that adversely affects a considerable</i>	1.6	7	27.1	40.3	24	3.78	0.94

	<i>proportion of people for who they are (such as religion, or race, or sexual orientation, background or disability).</i>							
--	--	--	--	--	--	--	--	--

22- Employee Relations

Q. No	Employee Relations	SD	D	N	A	SA	Mean	Std D
Q106	<i>The employees' unions in this company are active.</i>	11.6	14.7	37.2	30.2	6.2	3.04	1.08
Q108	<i>Any conflict can be solved through communication and interaction between employees and line managers.</i>	2.3	11.6	29.5	38	18.6	3.58	0.99
Q107	<i>In this company we have a policy for salary review.</i>	6.2	8.5	40.3	31	14	3.37	1.03
Q40	<i>Line managers are readily accessible when we have problems or need to speak to them.</i>	1.6	4.7	24	45	24.8	3.86	0.89

23- Discipline

Q. No	Discipline	SD	D	N	A	SA	Mean	Std D
Q122	<i>I perform a job that is well defined.</i>	0	10.9	37.2	41.1	10.9	3.51	0.83
Q59	<i>I know what I have to do in my job and what is expected of me.</i>	0.8	7	24.8	48.8	18.6	3.77	0.85
Q7	<i>I am aware of regulations and policies that state what will happen if I infringe the organisation's rules.</i>	0	10.1	20.2	37.2	32.6	3.92	0.96

24- Promotion

Q. No	Promotion	SD	D	N	A	SA	Mean	Std D
Q16	Promotion is instrumental in encouraging innovation, solving problems and introducing new ideas.	2.3	13.2	17.8	45	21.7	3.70	1.02
Q47	Promotion is awarded when I achieve a complex target, objective, or task.	4.7	15.5	30.2	33.3	16.3	3.41	1.07
Q109	This company uses promotion from within.	4.7	15.5	30.2	33.3	16.3	3.41	1.07
Q110	I have been promoted within the last three years.	17.8	15.5	21.7	27.9	17.1	3.10	1.35

25- Sharing Information

Q. No	Sharing Information	SD	D	N	A	SA	Mean	Std D
Q116	Information is always shared when we perform tasks.	0	16.3	26.4	38.8	18.6	3.59	0.97
Q42	I always try to share and seek information when performing tasks.	0.8	3.1	14	65.1	17.1	3.94	0.71
Q78	I perform jobs that require sharing information.	1.6	5.4	23.3	53.5	16.3	3.77	0.84
Q39	I perform jobs that require participating in teamwork.	2.3	6.2	17.8	50.4	23.3	3.86	0.92

26- Consideration and Respect

Q. No	Consideration and Respect	SD	D	N	A	SA	Mean	Std D
Q79	Consideration and respect increase employees' potential to introduce new ideas and solve problems.	3.9	8.5	22.5	34.9	30.2	3.79	1.08
Q88	Procedures and policies are designed to give employees satisfaction.	2.3	5.4	34.1	43.4	14.7	3.62	0.88
Q58	Before taking a decision, my manager will ask me if I have special circumstances or considerations that might affect or bother me while performing the task.	4.7	5.4	31	45	14	3.58	0.95

Q26	<i>Consideration and respect are very important in our company.</i>	0	10.9	15.5	44.2	29.5	3.92	0.94
------------	---	---	------	------	------	------	------	------

27- Employee Security

Q. No	Employee Security	SD	D	N	A	SA	Mean	Std D
Q111	<i>I perform tasks that have a high level of security.</i>	5.4	9.3	24	39.5	21.7	3.62	1.09
Q112	<i>I perform a job that is standardised throughout the industry.</i>	0	16.3	34.9	32.6	16.3	3.48	0.95
Q87	<i>I feel I have a future in this company.</i>	3.9	10.9	31	35.7	18.6	3.54	1.03
Q17	<i>My job is secure in this company.</i>	2.3	7.8	27.1	42.6	20.2	3.70	0.95

28- Motivation

Q. No	Motivation	SD	D	N	A	SA	Mean	Std D
Q86	<i>Finding solutions to challenges is rewarded in this company.</i>	1.6	8.5	36.4	35.7	17.8	3.59	0.93
Q61	<i>Normally, I do not expect sudden decisions.</i>	7	12.4	32.6	41.1	7	3.28	1.00
Q62	<i>I'm not disturbed by the behaviour of people around me.</i>	6.2	11.6	17.8	43.4	20.9	3.61	1.12
Q38	<i>I enjoy the working environment in my company.</i>	0.8	10.9	19.4	45	24	3.80	0.95

29- Organisational Performance

Q. No	Organisational Performance	SD	D	N	A	SA	Mean	Std D
Q18	Quality is the main consideration when developing new products.	5.40	10.1	21.7	45	17.8	3.59	1.06
Q81	Customer satisfaction is the main target when developing new products.	2.30	10.1	30.2	31	26.4	3.68	1.04
Q82	There is a consensus among employees about what creates value for customers.	0.80	14	31.8	37.2	16.30	3.54	0.95
Q37	The knowledge that we attain in this company allows us to create differential advantages in the products.	1.6	1.6	21.7	52.7	22.5	3.93	0.80

30- Organisational Structure

Q. No	Organisational Structure	SD	D	N	A	SA	Mean	Std D
Q83	A person who wanted to make his/her own decisions would be encouraged.	3.90	6.20	41.9	34.1	14	3.48	0.94
Q6	Most decisions people make here do not require their supervisor's approval.	12.4	14	38.8	27.1	7.80	3.03	1.10
Q84	When major decisions have to be made, the supervisor's role is minimal.	3.9	24	42.6	24.8	4.70	3.02	0.91
Q27	Unit members do not need to ask their supervisor before they do almost anything.	7	6.20	28.7	45	13.2	3.51	1.03

31- Organisational Knowledge

Q. No	Organisational Knowledge	SD	D	N	A	SA	Mean	Std D
Q80	Our company provides different channels to support learning and knowledge acquisition that are important for innovation.	0	7.8	21.7	51.2	19.4	3.82	0.83
Q63	Our company provides a knowledge base that employees can use	3.90	10.1	26.4	48.1	11.6	3.53	0.96

	<i>when developing new ideas.</i>							
Q48	<i>In this company, we are encouraged to share our knowledge especially when an issue arises.</i>	0	7.8	31	44.2	17.1	3.70	0.84

32- Organisational Culture

Q. No	Organisational Culture	SD	D	N	A	SA	Mean	Std D
Q51	<i>In this company, we know which customers (and/or market segments) will provide the most useful information for future growth.</i>	1.6	10.9	24	49.6	14	3.63	0.90
Q52	<i>We take time to understand our competitive environments in order to introduce new products.</i>	4.7	8.5	37.2	37.2	12.4	3.44	0.97
Q53	<i>We co-define value with customers.</i>	5.4	7.8	24	40.3	22.5	3.66	1.07
Q54	<i>Innovation is a core value in this organisation.</i>	0	9.3	34.9	35.7	20.2	3.66	0.90

33- Innovation Willingness

Q. No	Innovation Willingness	SD	D	N	A	SA	Mean	Std D
Q55	<i>I understand how I contribute to innovation in our company.</i>	1.6	10.1	31.8	39.5	17.1	3.60	0.93
Q50	<i>I view uncertainty as an opportunity and not as a risk.</i>	3.9	4.7	27.9	45	18.6	3.69	0.95
Q56	<i>In most cases, I try to exploit opportunities to develop creative potential in my department.</i>	0	3.1	25.6	58.1	13.2	3.81	0.69

34- Radical vs Incremental Innovation

Q. No	<i>Radical and Incremental Innovation</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>	<i>Mean</i>	<i>Std D</i>
Q57	<i>Our company offers new products by changing existing ones.</i>	3.9	7.8	34.9	48.1	5.4	3.43	0.86
Q60	<i>Our company often offers new products.</i>	1.6	3.1	17.8	55.8	21.7	3.93	0.81
Q5	<i>New products entail minor changes.</i>	0	7	38	47.3	7.8	3.55	0.73
Q8	<i>New products entail major changes.</i>	8.5	3.1	41.9	32.6	14	3.40	1.04

35- Origins of Innovation

Q. No	<i>Origins of Innovation</i>	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>	<i>Mean</i>	<i>Std D</i>
Q49	<i>Innovation is developed based on external sources and inputs.</i>	1.6	9.3	29.5	48.1	11.6	3.58	0.87
Q9	<i>Innovation is developed by copying others' external innovation.</i>	17.1	22.5	27.1	26.4	7	2.83	1.19
Q36	<i>Innovation is developed based on internal efforts.</i>	0	5.4	20.2	58.9	15.5	3.84	0.74
Q20	<i>Innovation is developed by minimal usage of external sources and ideas.</i>	8.5	14	41.1	28.7	7.8	3.13	1.03
Q19	<i>Our approach to product innovation is inspired and driven by organisational belief in innovation.</i>	6.2	7.8	29.5	41.9	14.7	3.51	1.03
Q35	<i>Our approach to product innovation is inspired and driven by customer needs.</i>	3.1	7	14.7	54.3	20.9	3.82	0.94

Summary

<i>Scales</i>	<i>Mean</i>	<i>Std</i>	<i>Median</i>	<i>Range</i>
<i>Training</i>	4.06	0.66	4.00	3.96-4.21
<i>Recruitment</i>	3.76	0.94	4.00	3.59-3.96
<i>Performance appraisal</i>	3.77	0.85	4.00	3.53-3.97
<i>Compensation and rewards</i>	3.32	1.04	3.25	3.01-3.49

<i>Employee development</i>	3.69	0.88	4.00	3.68-3.70
<i>Job design</i>	3.64	0.92	3.75	3.46-3.75
<i>Employee communication</i>	3.63	0.99	3.66	3.33-4.49
<i>Absence management</i>	3.38	0.92	3.33	3.00-4.00
<i>Talent management</i>	3.60	1.01	4.00	3.55-3.65
<i>Retention management</i>	3.61	1.03	3.75	3.08-3.93
<i>Work-life balance</i>	3.34	1.07	3.33	3.01-3.75
<i>Job engagement</i>	3.58	0.91	3.75	3.24-3.78
<i>Recognition</i>	3.35	1.05	3.50	3.03-3.73
<i>Health and safety</i>	3.68	1.04	3.75	3.27-3.94
<i>New technology</i>	3.25	0.95	3.00	3.17-3.38
<i>Redundancy</i>	3.42	1.08	3.33	3.26-3.68
<i>Diversity management</i>	3.43	0.95	3.33	3.19-3.68
<i>Email and Internet</i>	3.53	1.01	3.66	2.73-3.99
<i>Grievances</i>	3.41	1.01	3.33	3.07-3.74
<i>Employee voice</i>	3.35	1.14	3.50	3.05-3.55
<i>Equal opportunity</i>	3.70	0.98	3.66	3.44-3.86
<i>Employee relation</i>	3.47	1.00	3.50	3.04-3.86
<i>Discipline</i>	3.73	0.88	4.00	3.51-3.92
<i>Promotion</i>	3.38	1.13	3.25	3.10-3.70
<i>Sharing information</i>	3.79	0.86	4.00	3.59-3.94
<i>Consideration and respect</i>	3.73	0.96	4.00	3.58-3.92
<i>Employee security</i>	3.59	1.00	3.75	3.48-3.70
<i>Motivation</i>	3.57	1.00	3.75	3.28-3.80
<i>Organisational performance</i>	3.70	0.86	4.00	3.60-3.81
<i>Organisational structure</i>	3.57	0.86	3.75	3.40-3.55

<i>Organisational knowledge</i>	3.45	0.96	3.66	2.83-3.84
<i>Organisational culture</i>	3.69	0.96	4.00	3.54-3.93
<i>Innovation willingness</i>	3.26	0.99	3.00	3.02-3.51
<i>Radical vs incremental innovation</i>	3.68	0.87	4.00	3.53-3.82
<i>Origins of innovation</i>	3.60	0.96	3.75	3.44-3.66

Appendix 8: Factors Analysis (Reliability and ITC).

Factor 1: HPWs

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.866	.868	11

	Mean	Minimum	Maximum	Range	Maximum / Minimum	N of Items
Item Means	3.779	3.465	4.085	.620	1.179	11

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Training2	.501	.849
Training3	.400	.853
Recruitment1	.585	.841
Recruitment2	.680	.834
Recruitment3	.453	.853
Recruitment4	.479	.848
→Appraisal1 <u>(DELETED)</u>	.389	.866
Appraisal2	.471	.849
Appraisal3	.661	.835
JobDesign1	.649	.837
JobDesign2	.524	.845
JobDesign3	.591	.840

Factor 2: Expectations and information sharing

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.740	.747	5

	Mean	Minimum	Maximum	Range	Maximum / Minimum	N of Items
Item Means	3.722	3.519	3.946	.426	1.121	5

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Discipline1	.559	.673
Discipline2	.554	.675
SharingInformation1	.402	.739
SharingInformation2	.520	.693
SharingInformation3	.510	.692

Factor 3: Hygiene factors

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.841	.841	9

	Mean	Minimum	Maximum	Range	Maximum / Minimum	N of Items
Item Means	3.718	3.450	3.946	.496	1.144	9

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
RetentionManagement4	.598	.820
HealthandSafety1	.656	.816
HealthandSafety2	.496	.831
HealthandSafety3	.619	.819
EqualOpportunity1	.477	.832
EqualOpportunity2	.618	.818
EqualOpportunity3	.404	.844
<u>DELETED</u>		
EmployeeSecurity1	.564	.824
EmployeeSecurity2	.515	.828
EmployeeSecurity4	.424	.837

Factor 4: Motivation and communication

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.867	.867	9

	Mean	Minimum	Maximum	Range	Maximum / Minimum	N of Items
Item Means	3.679	3.380	4.062	.682	1.202	9

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EmployeeCommunication2	.474	.863
RetentionManagement1	.464	.863
RetentionManagement3	.659	.848
Grievances1	.562	.856
Grievances2	.549	.857
EmployeeRelations2	.714	.843
EmployeeRelations3	.429	.864
ConsiderationRespect1	.623	.851
ConsiderationRespect2	.613	.852
ConsiderationRespect3	.548	.857

Factor 5: Organisational Climate

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.877	.879	5

	Mean	Minimum	Maximum	Range	Maximum / Minimum	N of Items
Item Means	3.583	3.442	3.667	.225	1.065	5

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OrganisationalPerformance1	.632	.871
OrganisationalPerformance3	.739	.844
OrganisationalCulture2	.640	.867
OrganisationalCulture3	.820	.822
OrganisationalCulture4	.725	.849

Dependent variables:

Factor 1: Origins of innovation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.606	.608	4

	Mean	Minimum	Maximum	Range	Maximum / Minimum	N of Items
Item Means	3.579	3.132	3.845	.713	1.228	4

	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
OriginsofInno1	.533	.408
OriginsofInno2	.354	.565
OriginsofInno3	.340	.571
OriginsofInno6	.343	.573

Factor 2: Radical vs Incremental innovation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.617	.627	4

	Mean	Minimum	Maximum	Range	Maximum / Minimum	N of Items
Item Means	3.593	3.403	3.930	.527	1.155	4

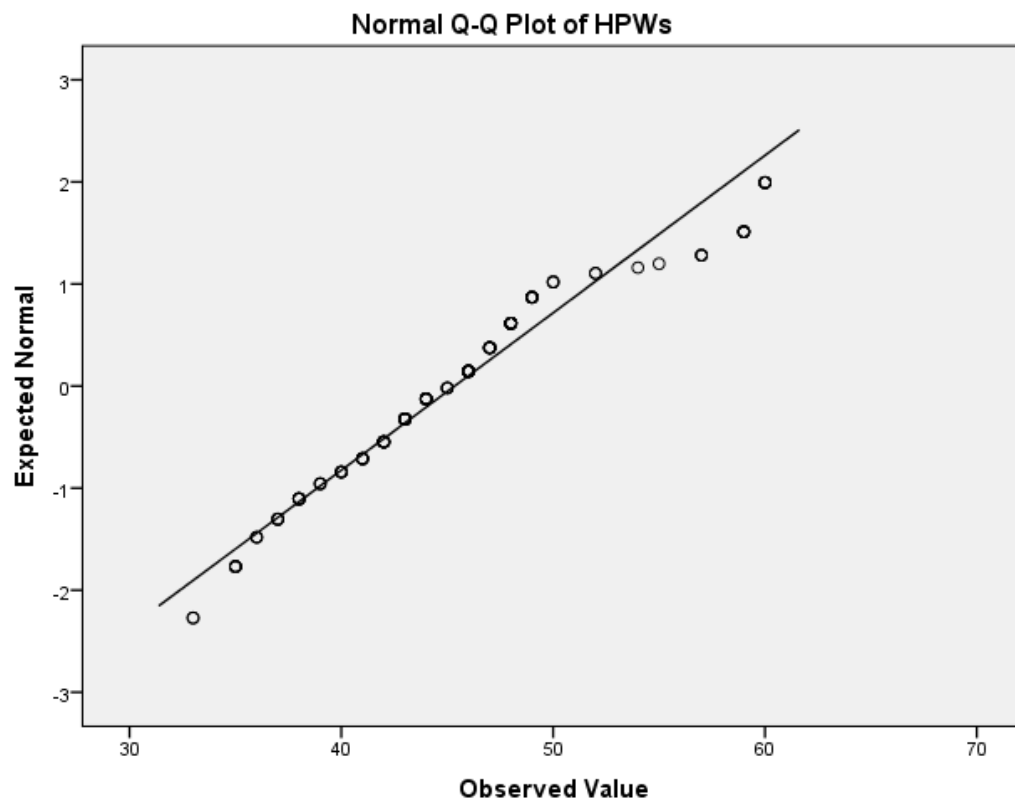
	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
InnovationWillingness1	.355	.579
RadicalvsIncrementalInno1	.603	.396
RadicalvsIncrementalInno2	.341	.586
RadicalvsIncrementalInno4	.328	.610

Appendix 9: Skewness and Kurtosis Results

1- HPWs

HPWs - Descriptives

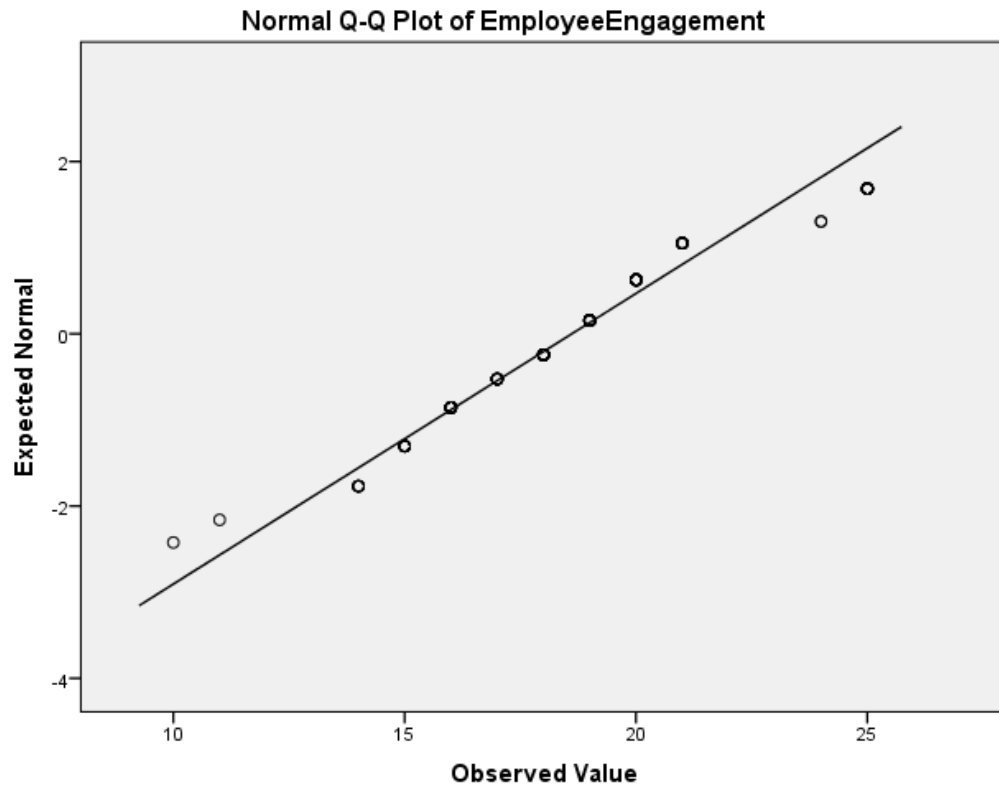
	Statistic	Std. Error
Skewness	.213	.578
Kurtosis	.132	.423



2- Expectations and Information Sharing

Expectations and information sharing - Descriptives

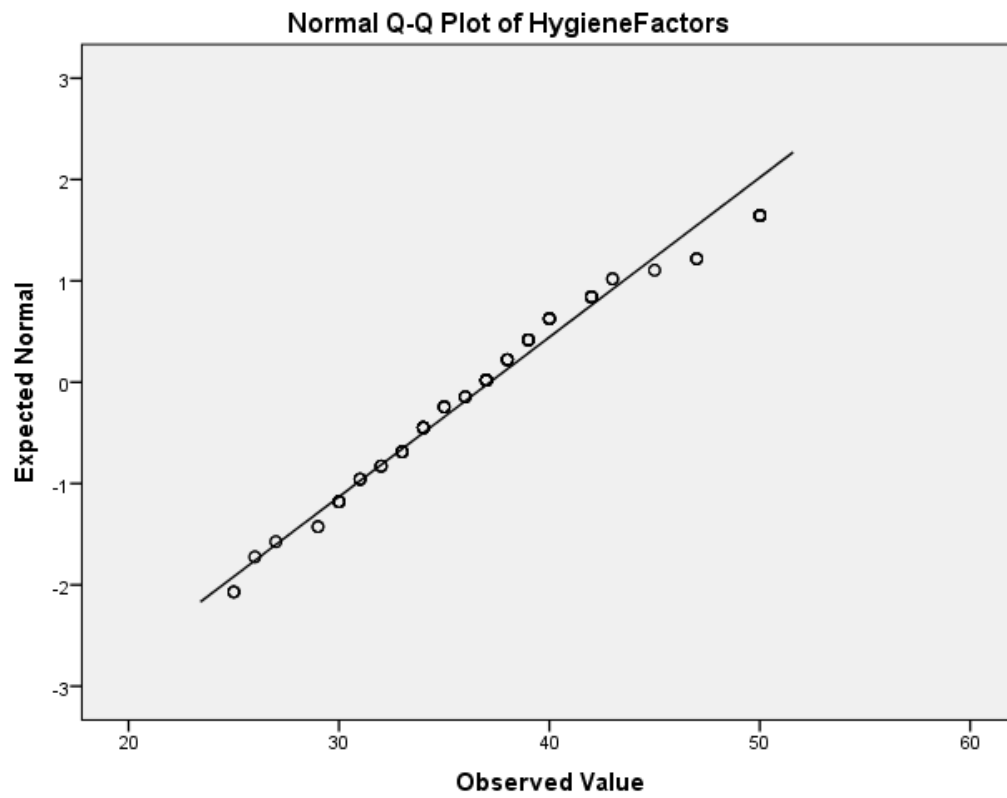
	Statistic	Std. Error
Skewness	.307	.213
Kurtosis	.543	.423



3- Hygiene Factors

Hygiene factors - Descriptives

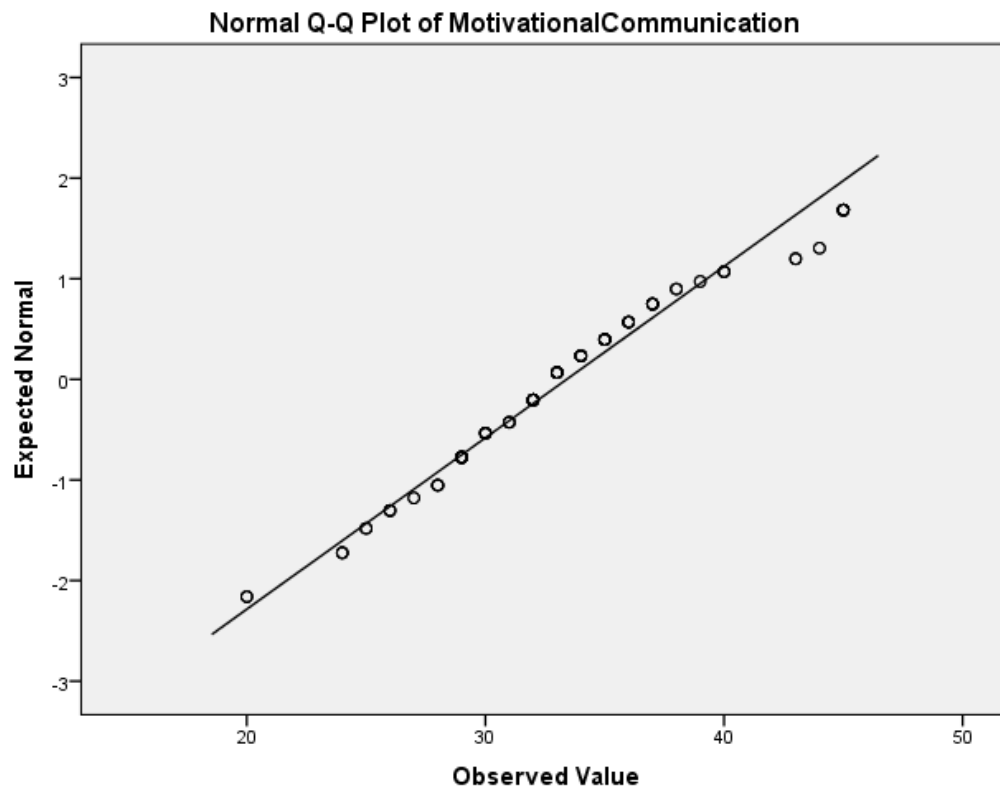
	Statistic	Std. Error
Skewness	.385	.213
Kurtosis	-.211	.423



4- Motivation and Communication

Motivation and communication - Descriptives

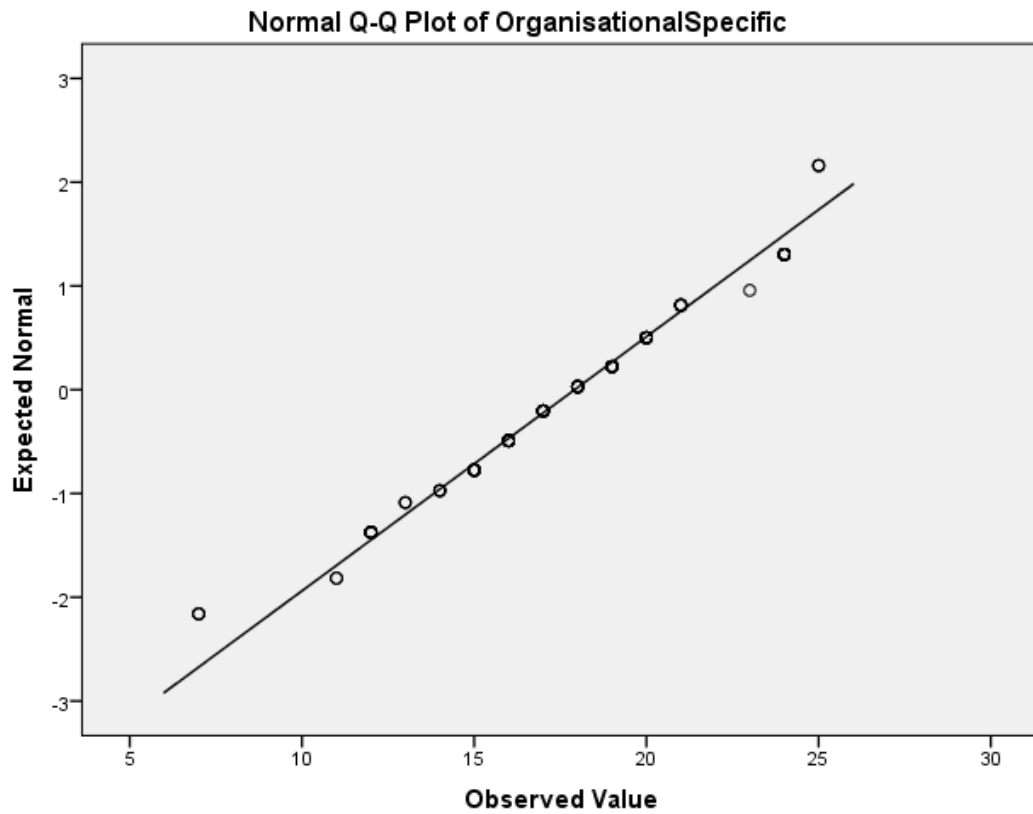
	Statistic	Std. Error
Skewness	.299	.213
Kurtosis	-.098	.423



5- Organisational Climate

Organisational climate - Descriptives

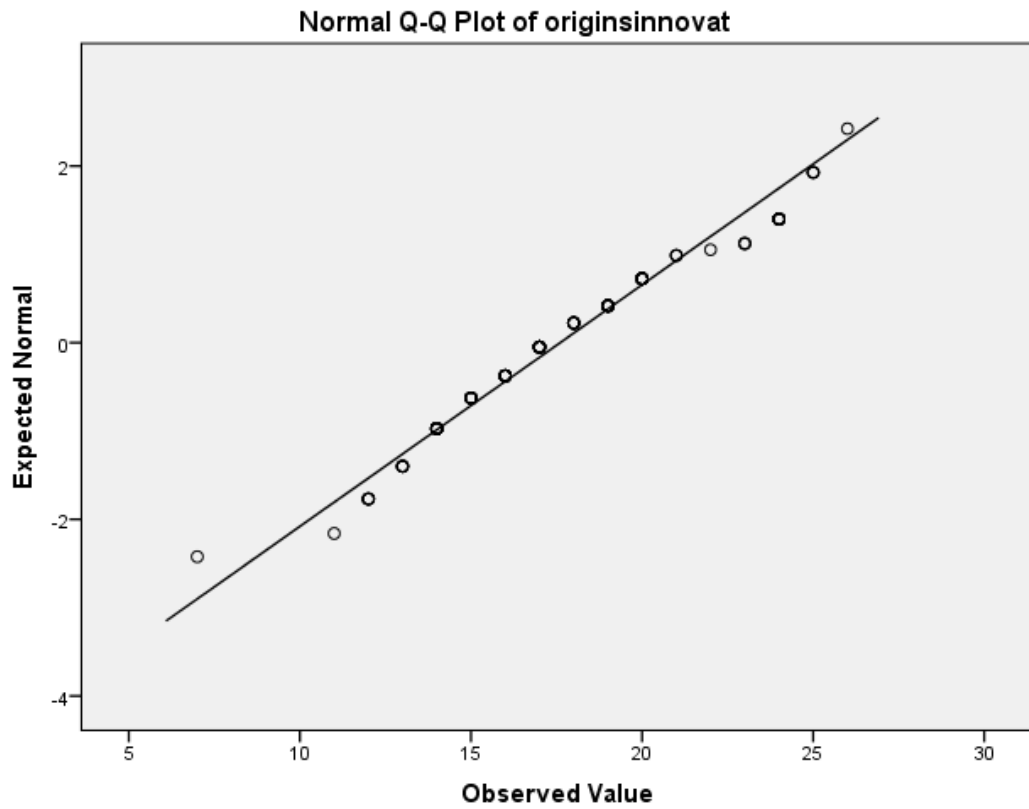
	Statistic	Std. Error
Skewness	-.245	.213
Kurtosis	-.177	.423



6- Origins of Innovation

Origins of innovation - Descriptives

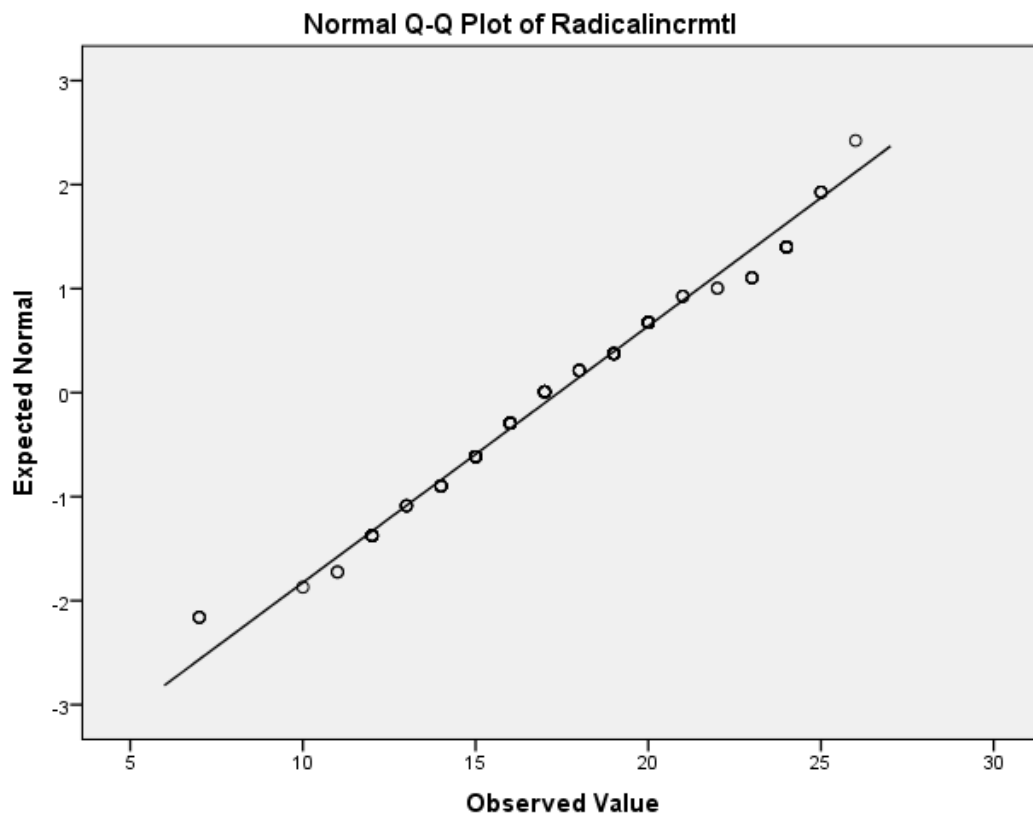
	Statistic	Std. Error
Skewness	.295	.213
Kurtosis	-.185	.423



7- Radical vs Incremental innovation

Radical vs incremental - Descriptives

	Statistic	Std. Error
Skewness	-.007	.213
Kurtosis	-.153	.423



Appendix 10: Multicollinearity Results

1- Origins of Innovation: Tolerance and VIF Scores

	Collinearity Statistics	
	Tolerance	VIF
HPWs	.204	4.891
EmployeeEngagement	.269	3.720
HygieneFactors	.234	4.276
MotivationalCommunication	.182	5.498
OrganisationalSpecific	.348	2.877
HPWs	.189	5.301
EmployeeEngagement	.256	3.908
HygieneFactors	.222	4.509
MotivationalCommunication	.161	6.204
OrganisationalSpecific	.320	3.125
Gender	.932	1.073
Department	.387	2.581
Age	.788	1.268
Education	.358	2.790

2- Radical vs incremental innovation: Tolerance and VIF scores

	Collinearity Statistics	
	Tolerance	VIF
HPWs	.204	4.891
EmployeeEngagement	.269	3.720
HygieneFactors	.234	4.276
MotivationalCommunication	.182	5.498
OrganisationalSpecific	.348	2.877
HPWs	.189	5.301
EmployeeEngagement	.256	3.908
HygieneFactors	.222	4.509
MotivationalCommunication	.161	6.204
OrganisationalSpecific	.320	3.125
Gender	.932	1.073
Department	.387	2.581
Age	.788	1.268
Education	.358	2.790